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REFUGEE RETURN

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ABSTRACT

Refugee Return

Despite rising refugee numbers worldwide, refugees' return decisions remain poorly understood. Prior work examines either intentions or realized return, but not both. We fielded a ten-wave panel of Ukrainian refugees, linking prewar home municipalities to geocoded conflict and territorial control data and eliciting war expectations. Intentions strongly predict behavior: by 2025, 42% of those planning to return soon in 2022 had returned, versus 1% of those planning to settle abroad. Increasing conflict in the home municipality reduces return there but barely affects return to Ukraine overall. More pessimistic war expectations explain 21% of the decline in return intentions.

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I Introduction

The global refugee population surged from 27 million in 2021 to 35 million by the end of 2022, the largest annual increase ever recorded.[1] A central policy and research question in such crises is whether, when, and where displaced people return. These margins shape origin-country reconstruction and host-country integration and fiscal planning (Choudhury, 2016; Marbach et al., 2018; Görlach and Motz, 2021; Bahar et al., 2024; Mayda et al., 2022; Di Maio and Leone Sciabolazza, 2023; Fasani et al., 2024). Yet credible evidence on the determinants of voluntary return during ongoing conflict and on whether stated return intentions predict realized return remains scarce.

The literature faces three main challenges. First, measurement: previous studies observe either refugees' stated return intentions or realized return, but not both, preventing a direct assessment of whether intentions predict subsequent behavior. Second, identification: conflict evolves rapidly and unevenly across space, while migration and return decisions are endogenous and likely correlated with unobserved individual characteristics.[2] Third, expectations: data rarely capture individuals' assessments about the war's trajectory or conditions upon return, so studies cannot identify how much these expectations, rather than observable constraints such as economic conditions, drive return decisions.

We address these issues in the context of the largest displacement in Europe since World War II, the forced migration that followed Russia's full-scale invasion of Ukraine in February 2022. We launched a longitudinal survey of Ukrainian refugees, with 10 survey waves from June 2022 to May 2025. Our main analysis focuses on 2,484 individuals who provided information on their home municipality in the first wave and answered at least one subsequent wave (3.5 interviews per respondent on average). The survey allows us to track return intentions and realized return (including the precise return location) for the same individuals. We link respondents' home municipalities to geocoded, time-varying measures of local conflict intensity and to changes in territorial control. The setting is well-suited to studying voluntary return because the EU Temporary Protection Directive grants Ukrainian refugees immediate residence and work rights in any EU member state, limiting confounding from host-country legal-status uncertainty.

We begin by documenting three descriptive facts about return intentions and realized return. First, realized return during an ongoing war is sizable. Using population weights, we estimate that 11% of respondents had returned to Ukraine by the end of our panel. Among those who returned, 83% went back to their home

[1] Additionally, there were 5.4 million asylum seekers and 62.5 million internally displaced persons in 2022. For a comprehensive global overview, see UNHCR (2023).

[2] For example, in high-conflict areas, people can be forced to flee even when they have strong local attachment and high return intentions. In lower-conflict areas, those who leave may be disproportionately individuals with weaker attachment and lower baseline return intentions. Longitudinal data address this selection problem by following the same individuals over time. Moves are observed directly, and outcomes are compared within a person before and after changes in conflict exposure, reducing bias from changes in the composition of who remains.

municipality. Second, early return intentions are strongly predictive of subsequent behavior: 42% of respondents who initially said they planned to return soon had returned, compared with only 1% of those who initially said they planned to settle outside Ukraine. Third, return intentions change over time. The share of respondents planning to return soon or once it was safe remained broadly stable during the first year, but then declined steadily, by 3.5 percentage points per 100 days.[3]

We then estimate how changes in local conflict exposure shape realized return, exploiting within-person variation in conflict exposure between interviews and distinguishing between two dimensions of conflict, namely intensity and territorial control. The headline result is that local conflict intensity reduces return to affected municipalities in both the short and medium term. The estimated negative effect of local conflict intensity on *overall return* to Ukraine is smaller and not statistically significant, as part of the decline in return to the home municipality is offset by refugees returning elsewhere in Ukraine. A one standard deviation increase in conflict intensity in a respondent's home municipality reduces the medium-run likelihood of returning to that municipality by 1.5 percentage points, or 20% of the mean.

We further find that the sharp decline in return intentions over the course of the war closely moves with refugees' expectations about how and when the war will end. The share expecting Ukraine to win and fully liberate all occupied territories by end-2024 fell from 71% in late 2022 to 35% in late 2023. Individuals who revise these expectations downward become substantially less likely to plan to return and more likely to plan to settle abroad. Overall, shifting war expectations explain roughly one-fifth of the decline in return intentions.

To address concerns about selection and non-random attrition, we re-estimate our models using inverse-probability and population weights and obtain similar results. Findings are robust to alternative conflict measures, additional controls, and spatial correlation, different functional forms, and excluding respondents from long-occupied territories and the easternmost regions.

Related literature and contributions. We make three contributions. First, we close a key measurement gap that limits the policy relevance of existing evidence: previous studies on refugee return observe either return intentions or realized return, but not both for the same individuals. As a result, widely used "return intention" measures are difficult to interpret as behavioral indicators (Alrababah and Casalis, 2024). Our survey is designed to bridge this gap by repeatedly eliciting return plans and then observing subsequent mobility outcomes for the same refugees, including the precise return location. This enables a direct validation exercise that shows that early return plans strongly predict realized returns. Furthermore, our survey allows us to track how many of those who returned to

[3]About one third of this decline reflects respondents who had already returned, about half reflects respondents who had shifted toward planning to settle outside Ukraine, and the remainder reflects a rise in the share reporting that they did not know.

Ukraine have subsequently left again.

Second, we add to the literature on refugee return. Most of this literature examines how security, conflict dynamics, and political and economic conditions shape refugees' return (e.g., Camarena and Hägerdal, 2020; Zakirova and Buzurukov, 2021; Beaman et al., 2022). A recent review highlights two gaps that are particularly salient for policy and forecasting (Alrababah and Casalis, 2024): rigorous evidence on return dynamics during active conflict remains limited, and return from high-income host countries is understudied despite potentially different constraints and migrant selection. We address these gaps by exploiting within-respondent variation across survey waves and show that local conflict mainly affects where return occurs (the home municipality versus elsewhere in Ukraine), while liberation increases home return with a lag.

Third, we contribute to the literature on the determinants of refugees' return intentions and preferences. Prior research shows that these intentions and preferences are shaped by factors such as security conditions, economic opportunities, and previous exposure to conflict (Arias et al., 2014; Ghosn et al., 2021; Al Husein and Wagner, 2023; Alrababah et al., 2023).[4] For Ukraine, recent experiments emphasize the role of national identity, territorial control, and security guarantees (Adema et al., 2025; Vakhitov et al., 2025). We add a distinct dimension that is typically unobserved by directly eliciting refugees' expectations about the war's trajectory, and show that changes in these expectations account for 21% of the decline in return intentions over time.

II Data

A Survey of Ukrainian Refugees in Europe

We collaborated with the survey company Verian (formerly Kantar Public) to field a 10-wave online panel survey of Ukrainian refugees across Europe called *Voice of Ukraine*. Respondents aged 18 and over were recruited via social media ads to participate in the baseline survey. The ads targeted Ukrainian refugees residing in the EU, EFTA, the UK, and Moldova. For subsequent waves, contact was made via email. The baseline was conducted between 14 June and 22 December 2022.

On average, respondents completed the first survey 194 days after leaving Ukraine. The survey was completed by 11,783 respondents with Ukrainian citizenship, of whom 6,299 agreed to participate in future waves. 3,029 individuals participated in at least one follow-up wave.[5] Figure A1a shows the distribution

[4] Aksoy et al. (2024) studies refugees from Syria and find that heightened violence in students' hometowns leads to improved school outcomes in Turkey, consistent with lower expected return plans. In related papers, Zaiour (2023) and Bassetto and Freitas Monteiro (2026) show that violence in the origin country can reduce return intentions and increase plans to settle in the host country, also among non-refugee migrants.

[5] In all analyses, we exclude 101 baseline survey respondents who do not hold Ukrainian citizenship.

of Ukrainian refugees across European countries, and Figure A1b shows the sampling rate across European destinations. In all major host countries, we achieved a sampling rate of at least 1 in 1000 refugees. Those who agreed to be recontacted were asked to complete nine follow-up surveys via email between September 2022 and May 2025. The follow-up emails explicitly asked respondents who returned to Ukraine to complete the survey. Participants received a 3 Euro voucher to encourage participation in each survey wave.

Tables A1 and A2 provide detailed information on the timing and number of observations for each wave, while Figure A2 visually presents the distribution of interviews over time. The first survey wave collects information on respondents' demographic characteristics, their current living situation, and their intentions to return to Ukraine.

We measure return intentions using the following question:

> *What are your plans regarding returning to Ukraine?*

Response options are:

- *I intend to go back very soon.*
- *I intend to go back at some point later when I feel it is safe to return.*
- *I do not intend to go back and plan to settle outside Ukraine.*
- *I do not know yet.*
- *Prefer not to answer.*

We also asked respondents to report where in Ukraine they lived prior to leaving. We collected the region (*oblast*) using a drop-down menu and the municipality (*hromada*) using a write-in field.[6]

To link respondents to conflict exposure, we parsed the write-in municipality field and matched 82% of baseline respondents to a unique home municipality. Figure A3 maps respondents' pre-departure locations. In the follow-up waves, respondents were repeatedly asked about their current location, return intentions, and expectations about the outcome of the war. For more information on our survey and wording of key questions, see Appendix A.1.

B Conflict Data

We examine two local conflict dimensions: intensity and territorial control. To measure conflict intensity, we conduct a principal component analysis of deaths and conflict events reported by ACLED and UCDP in each municipality (see Appendix A.1). Figure A4 maps this measure between respondents' first and last interviews, showing that conflict was concentrated along the front line, the

[6] As of 2020, Ukraine has 27 regions, 137 districts, and 1,469 municipalities.

Russian border, and major cities such as Kyiv and Dnipro, with notable variation even in Ukrainian-controlled areas far from the front line. Figure A5 shows that although Ukraine-wide conflict intensity does not show large changes over time, there is considerable variation within regions over time.

To capture territorial control, we construct a daily dataset from the Institute for the Study of War (ISW) maps, which track the front line using publicly available information. Districts (*raions*) are classified as under Ukrainian control or (partially) occupied on a daily basis. Figure A6 shows territorial control at the survey start: most of Ukraine was never occupied, several areas were liberated before the first wave, and Russia retained control over large territories, some held since before 2022. Figure A7 illustrates changes during the full study period, including Ukraine's 2022 liberation of areas in Kharkiv and Kherson, and Russia's partial re-occupations in the regions of Kharkiv and Sumy in 2024.

We distinguish whether a district has been continuously Ukrainian-held since 24 February 2022, liberated before the first interview, liberated, re-occupied, or continuously occupied between interviews (Table A3).

C Estimation Samples

To study within-individual changes in refugee return and intentions, we construct two samples. The *short difference* sample consists of first differences between all subsequent responses. If a respondent answers in N waves, there are $N-1$ first differences for that respondent. This allows us to study the short-run effects of conflict while using all the variation in conflict intensity and territorial control during our survey period. The *long difference* links an individual's response in the baseline survey and the last follow-up survey response. This enables us to study the medium-run response to changes in local conflict.

Our long difference analysis uses a panel of 2,484 respondents who reported their home municipality, allowing us to link them to our measures of local conflict. On average, respondents in the long-difference panel participated in the survey 3.5 times. Therefore, our short difference analysis includes 8,698 observations. The average number of days between the interviews in the short difference sample is 229 (SD: 184), and in the long difference sample 628 (SD: 336). We exclude an observation if the interviews are less than 30 days apart (less than 3% of observations). For both samples, we refer to the two interviews as the first and second responses, to prevent confusion with the first and second waves. As we are interested in return and return intentions, we exclude individuals who have returned to Ukraine before the first response in the short differences sample. This is in line with the long difference sample, as every respondent is abroad at the time of the baseline wave.

D Descriptive Statistics

Table A4 shows descriptive statistics of the baseline, short- and long difference samples. Most of our respondents are women aged 25 to 65. A quarter of respondents have a partner in Ukraine, and two-thirds have a tertiary degree. Differences between the baseline sample and the short- and long-difference samples are relatively small, suggesting that attrition does not strongly change our demographic sample composition. We compare the composition by sex, age bins, and host countries with administrative Eurostat data on Ukrainian refugees in the EU in Table A5. Women and middle-aged people are slightly overrepresented in our survey. We further analyze selective attrition and representativeness in section IV.

III Empirical strategy

To study the causal effect of changes in territorial control and conflict intensity on refugees' return, we use the short-difference and long-difference samples introduced above.

Our main outcome is a set of return indicators measured at the second interview, Y_{it_2}, capturing actual return outcomes and return intentions (see Table 1). We regress these outcomes on conflict intensity and (levels and changes of) territorial control between the first and second interviews, (t_1, t_2), controlling for baseline covariates measured at t_0, including individual return intentions and pre-period conflict exposure. We estimate the following model:

$$(1) \quad Y_{it_2} = \beta_1 Conflict_{mt_1t_2} + \beta_2 Conflict_{mt_0t_1} + \beta_3^{'}\mathbf{Territory}_{dt_1t_2} + \gamma^{'}\mathbf{ReturnInt}_{it_1} + \delta^{'}\mathbf{X}_i + \psi_{t_1} + \psi_{t_2} + \theta_h + \epsilon_{it_2}$$

where t_0 is the start of the Russian full-scale invasion (24 February 2022) and t_1 (t_2) is the time of the first (second) response. To prevent endogeneity arising from respondents' choice of when to answer the survey, t_1 and t_2 refer to the dates on which the respective survey waves were fielded, rather than the dates on which individuals submitted their responses. $Conflict_{mt_1t_2}$ is the local conflict intensity per 30 days in one's home municipality between the two survey responses. We also control for conflict intensity between 24 February 2022 and the first response, $Conflict_{mt_0t_1}$. Controlling for this is important as conflict before the first response and between survey waves is positively correlated ($\rho = 0.54$). Without this control, the variable $Conflict_{mt_1t_2}$ may also capture the effect of prior conflict intensity, including migrant selection, which could independently affect subsequent return.

$\mathbf{Territory}_{dt_1t_2}$ captures the change in territorial control in respondent i's home district d between the first and second interviews. Our main focus is the roughly

10% of respondents whose home districts were liberated between survey waves. We estimate the effect of liberation by comparing their outcomes with those of respondents whose home districts remained occupied over the same interval, which serves as the reference category. In contrast, districts that were already liberated or never occupied by the first interview are not "treated" between waves, and refugees from these areas may differ systematically from those from occupied areas. We therefore treat coefficients for these categories as correlations rather than causal effects.

$\mathbf{ReturnInt}_{it_1}$ measures the respondent's stated return intentions in the first interview. Because these intentions are measured at baseline, they reflect the factors shaping return plans that were already present before the first survey wave.

We control for a rich set of baseline individual characteristics, $\mathbf{X}_i$, to account for demographic and background differences that may predict return: sex, age bin (18-24; 25-34; 35-44; 45-54; 55-59; 60-64; 65 and older), partnership status, whether one had a partner left behind in Ukraine, whether the respondent left Ukraine with children below 18, having a tertiary degree, speaking English, continuing one's job in Ukraine remotely, whether one left Ukraine before 24 February 2022, and whether one completed the baseline survey in Russian. We also control for the population and population squared of the respondent's home municipality, since conflict intensity mechanically tends to be higher in more populous places. In addition, to capture whether respondents come from larger versus smaller settlements within a municipality, we control for the self-reported population of the home settlement (more than 500,000; 50,000–500,000; less than 50,000). Finally, we also control for the distance in kilometers between the centroid of the initial destination country and the home municipality.

We also include fixed effects for the initial host country during the baseline wave (θ_h), which absorb time-invariant host-country characteristics that may influence return decisions. Fixed effects for the week of the first and second survey responses (ψ_{t_1} and ψ_{t_2}) capture common time variation in return, such as geopolitical developments and changes in conflict intensity at the national level in Ukraine. In our most demanding specification, we additionally include home-municipality fixed effects, absorbing all time-invariant place-specific determinants of mobility; in that case, the conflict variables identify differential effects within the same municipalities over time. We cluster standard errors at the district level.

To summarize, our identification comes from following the same respondents over time and using within-respondent changes in conditions at origin between the first and second interviews, comparing individuals whose home municipalities experience different shifts in conflict intensity and territorial control. The key assumption is that, conditional on baseline covariates and common time shocks, these changes are not systematically related to other unobserved factors that affect return decisions over the same interval, so that the coefficients capture the causal effect of changes in conflict exposure and territorial control.

IV Results

A Do Return Intentions Predict Actual Return?

We start by linking baseline intentions to subsequent behavior. Table 1 reports return rates by respondents' initial plans, which shows a clear gradient on both samples: stronger stated intentions to return are associated with substantially higher realized return. Column 3 reweights observations to make the sample representative for the population of Ukrainian refugees across Europe (see Appendix Section A.2), which represents our best estimates of overall rates of return. In particular, 42.3% of those who planned to return "very soon" in Wave 1 subsequently returned, compared with only 1.2% of those who planned to settle outside Ukraine.

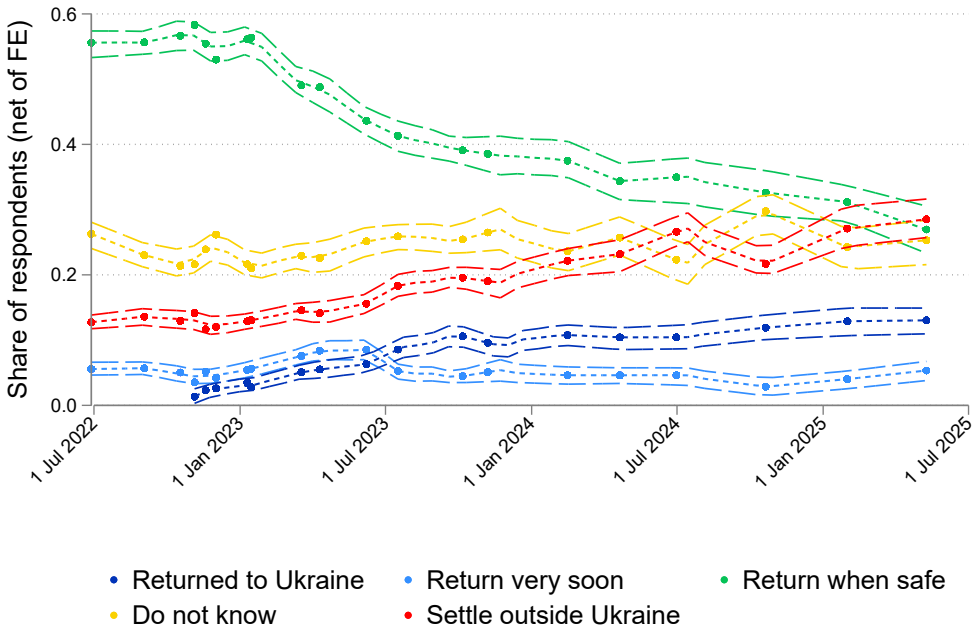
Table 1: Return intentions and realized mobility

	(1) Short difference	(2) Long difference	(3) Long difference
		Unweighted	Population weighted
Panel A: % returned by initial return intention			
Return very soon	29.8	39.7	42.3
Return when safe	3.0	11.8	11.5
Do not know	1.2	3.5	3.4
Settle outside Ukraine	0.0	1.2	1.2
Panel B: Outcomes			
Returned	3.5	10.1	11.3
Returned to home municipality	3.0	7.5	9.3
Returned elsewhere in Ukraine	1.0	2.0	1.9
Moved to third country	2.8	6.2	6.5

Notes: Panel A shows the share of individuals who returned to Ukraine during the last response, by return intention in the first response. Panel B reports the main outcomes. As for the location of return, the second and third rows of Panel B refer to the sample with a reported return location (restricted sample). Columns 1 and 2 report unweighted results on the short and long differences sample. Column 3 reports results for the long differences sample, weighted with the product of the inverse probability weights (IPW) based on a logit model of follow-up response and population weights that match the sample to the distribution of refugees across sex–age–host-country cells using Eurostat data. For details, see Appendix Section A.2. The full short difference sample comprises 8,698 observations, the restricted sample 5,769. The full long difference sample comprises 2,484 observations, and the restricted sample comprises 2,084.

Next, we distinguish two dimensions of return. The first is whether a respondent returns to Ukraine at all. The second is whether the return is to the home municipality (rather than another location in Ukraine). On the unweighted short (long) difference sample, 3.5% (10.0%) of respondents returned to Ukraine; among returnees, more than three-quarters returned to their home municipality. Using the weighted long differences, we estimate that 11% of respondents returned to

Figure 1. : Within-individual return intentions and return over time



Notes: Binned scatterplot with non-parametric trend for levels of return intentions over time, net of individual fixed effects. For each level of return intentions, we perform the following procedure. First, we assign all observations to 20 equally sized bins over calendar time and residualize the outcome by regressing it on individual fixed effects. We perform this procedure for 100 bootstrap samples to obtain smoothed 90% confidence bands (by resampling at the respondent level). We draw markers for (i) the mean for each of the 20 equally sized bins over calendar time, (ii) a predicted mean for each bin, (iii) a 90% confidence band around the predicted mean. N = 13,518 responses from 3,029 unique respondents, which includes respondents for whom the home municipality is not known.

Ukraine, of whom 83% to their home municipality.[7] At the same time, a non-trivial share of refugees relocated across host countries rather than returning to Ukraine (Figure A10).

To interpret realized returns, it is also important to track how stated plans change over time. Figure 1 traces the evolution of intentions and realized return in the full panel after netting out individual fixed effects using a non-parametric approach. Intentions were broadly stable from summer 2022 to January 2023, coinciding with Ukraine's territorial gains. From early 2023 onwards (a period

[7] A natural concern is that returns may be temporary. Our panel evidence suggests this is uncommon: in the long difference sample, only 13% of those who have returned to Ukraine after the first interview were living outside Ukraine by the last interview. Figures A8 and A9 report return intentions and realized returns by individual and situational characteristics over time.

with limited territorial recovery), return intentions weakened steadily, and the share planning to settle outside Ukraine increased approximately linearly. Between January 2023 and June 2025, the share reporting plans to return soon or when safe fell by 3.5 percentage points per 100 days. Over the same period, the share who had returned to Ukraine increased by 1.2 percentage points per 100 days, and the share planning to settle outside Ukraine increased by 1.8 percentage points per 100 days, from 11% to 30%. Figures A11 and A12 show that intentions are generally persistent between interviews, and when they change, they typically move to adjacent categories.

In sum, initial return intentions strongly predict subsequent return, while average return intentions steadily weaken over time. These descriptive patterns, however, do not pin down the role of conflict, because return decisions and intentions may change alongside individual circumstances and broader wartime developments.

B Results on Realized Returns

Building on the descriptive evidence above, we now quantify how conditions in respondents' home municipalities shape realized return outcomes. Table 2 reports estimates of equation 1 for (i) return to Ukraine, (ii) return to the home municipality, and (iii) return elsewhere in Ukraine, using both the short- and long-difference samples.

Conflict intensity. We find no evidence that local conflict intensity affects the overall return to Ukraine.[8] In contrast, conflict intensity strongly affects *where* returnees go within Ukraine. A 1 S.D. increase in conflict intensity reduces return to the home municipality by 0.8 percentage points in the short run (27% of the mean), and by 1.5 percentage points in the medium run (20% of the mean). To illustrate magnitudes, a refugee from a municipality with no local conflict (-1.47 S.D. below average) is 2.2 percentage points more likely to return home in the medium run than a refugee from an average-conflict municipality, all else equal. Point estimates suggest a partial offsetting increase in returns to other locations within Ukraine (approximately one-third of the decline in home-municipality returns), although this effect is not statistically significant. Tables A7 and A8 show that these results are robust to the gradual inclusion of controls, and Table A7 further demonstrates that the effect on home-municipality return remains robust when municipality fixed effects are included.

Territorial control and liberation. Table 2 further shows that the liberation of one's home district does not substantially increase return in the short run, nor does it shift return disproportionately toward the home municipality compared to other locations within Ukraine. However, in the medium run, liberation prompts a large response, primarily driven by returns to respondents' home municipalities: from a baseline mean of 7.5%, liberation increases the probability of returning to

[8] Table A6 shows that conflict also has no sizeable impact on onward migration between host countries.

Table 2: The effect of conflict on realized return

Panel A: **short difference**	Returned		
	To Ukraine	To home municipality	Elsewhere in Ukraine
	(1)	(2)	(3)
Conflict intensity (1 SD)	-0.002	-0.008	0.002
	(0.002)	(0.002)	(0.002)
Remain occupied	ref.	ref.	ref.
Liberated between interviews	0.008	0.007	0.009
	(0.010)	(0.012)	(0.007)
Remain liberated	0.001	0.016	-0.009
	(0.007)	(0.009)	(0.007)
Never occupied	-0.000	0.007	-0.011
	(0.008)	(0.009)	(0.006)
Observations	8,698	5,769	5,769
R-squared	0.148	0.115	0.046
Average dep. var.	0.034	0.030	0.010
Panel B: **long difference**			
	(1)	(2)	(3)
Conflict intensity (1 SD)	-0.005	-0.015	0.005
	(0.008)	(0.004)	(0.006)
Remain occupied	ref.	ref.	ref.
Liberated between interviews	0.046	0.060	-0.016
	(0.014)	(0.021)	(0.017)
Remain liberated	0.004	0.037	-0.026
	(0.034)	(0.030)	(0.014)
Never occupied	-0.010	0.015	-0.041
	(0.017)	(0.016)	(0.013)
Observations	2,484	2,084	2,084
R-squared	0.160	0.160	0.084
Average dep. var.	0.101	0.075	0.020

Notes: This table shows regression results of equation 1 for three different outcomes on the short difference (Panel A) and long difference sample (Panel B): (1) whether a respondent has returned to Ukraine, (2) whether a respondent has returned to their home municipality and (3) whether a respondent has returned to another place in Ukraine. (1) relies on the full first difference samples, and (2) and (3) rely on all first differences between survey waves with return location in Ukraine. The average number of days between responses is 163 (229) for the full (with return location) short difference and 566 (628) for the full (with return location) long difference sample. Conflict intensity is measured at the municipality level, and changes in territorial control are measured at the district level. All models include controls for return intentions during the first response, settlement type dummies, population, population squared, week of the first and week of second interview fixed effects, individual characteristics (see Section III for a full overview), week of leaving Ukraine, initial host country fixed effects, and prior conflict between the start of the conflict and the first response. Standard errors, clustered at the district level, are shown in parentheses.

the home municipality by 6.0 percentage points. The contrast between the short

and medium run may reflect households waiting for urgent repairs to their home or municipal infrastructure, or taking time to assess whether the security situation has improved enough to facilitate a return.

Heterogeneity. We next examine how the effects of conflict intensity vary across refugees. Table A9 interacts conflict intensity with baseline intentions and shows that the deterrent effect is concentrated among those who initially planned to return soon or when safe (the groups with the highest baseline return rates). Figure A13 shows that the deterring effect is also strongest among respondents with a partner remaining in Ukraine. Table A10 shows that the reduction in home-municipality return is largest among respondents from the North, West, and Central regions, particularly in the short run, both in absolute and relative terms. Conflict intensity also has a stronger impact when respondents are farther from the front line. Finally, we find suggestive evidence that conflict at home increases return to other locations within Ukraine, primarily among respondents from the South and East.

C Results on Return Intentions

The previous section showed how conflict in the home municipality affects *realized* return, distinguishing between return to Ukraine, to the home municipality, and elsewhere in Ukraine. We now study return intentions because they complement these results in two ways. First, intentions can adjust before households are able to relocate, providing an early signal of how refugees respond to changes in safety and territorial control. Second, realized returns reflect both preferences and constraints; examining intentions helps us assess whether conflict shifts the willingness to return, rather than mainly affecting the timing and destination of returns within Ukraine.

Against this backdrop, Table 3 presents the results: Column 1 focuses on plans to return soon or when it is safe, and Column 2 focuses on plans to settle outside Ukraine. We find that higher conflict intensity increases plans to return soon or when safe, but has no effect on definite plans to settle outside Ukraine in either the short- or medium-run. This pattern is consistent with the idea that exposure to conflict can strengthen attachment to the home region or country (see, e.g., Lupu and Peisakhin, 2017); related evidence for Ukrainian refugees similarly links stronger attachment to higher intentions to return (Vakhitov et al., 2025).

Turning to territorial control, liberation has little effect on reported return intentions among respondents who remain abroad. One may worry, however, that this sample restriction mechanically attenuates the effect of liberation: if liberation prompts those most willing to return to go back, they no longer appear in the intentions sample in the next wave. To assess this selection channel, Table A11 re-estimates Columns 1 and 2 of Table 3 but includes returnees, assigning them the intention to return soon.[9] With this adjustment, liberation appears to

[9]We classify respondents who have already returned by the second interview as intending to return

Table 3: The effect of conflict on return intentions

	Return intentions	
	Return soon or when safe	Settle outside Ukraine
Panel A: **short difference**		
	(1)	(2)
Conflict intensity (1 SD)	0.015	-0.000
	(0.007)	(0.005)
Remain occupied	ref.	ref.
Liberated between interviews	0.009	0.007
	(0.025)	(0.018)
Remain liberated	0.019	0.007
	(0.020)	(0.014)
Never occupied	-0.016	0.001
	(0.023)	(0.017)
Observations	8,398	8,398
R-squared	0.425	0.490
Average dep. var.	0.526	0.205
Panel B: **long difference**		
	(1)	(2)
Conflict intensity (1 SD)	0.019	-0.005
	(0.014)	(0.011)
Remain occupied	ref.	ref.
Liberated between interviews	0.015	-0.024
	(0.037)	(0.028)
Remain liberated	-0.006	0.026
	(0.044)	(0.037)
Never occupied	-0.046	0.006
	(0.041)	(0.034)
Observations	2,393	2,393
R-squared	0.320	0.322
Average dep. var.	0.505	0.204

Notes: This table shows regression results of equation 1 for return intentions and integration outcomes on the short difference (Panel A) and long difference sample (Panel B). The outcome in column 1 (2) is a dummy for planning to return soon or when safe (planning to settle outside Ukraine). All models include the same regressors as Table 2. We restrict the sample to all subsequent responses where the respondent had not returned to Ukraine by the first response. Standard errors, corrected for clustering at the district level, are shown in parentheses.

(Column 1) and not intending to settle outside Ukraine (Column 2).

shift return intentions slightly in the medium run, in line with the realized-return effects documented in the previous section.

Taken together with the realized-return results, these findings point to a consistent interpretation. Higher conflict intensity does not appear to increase plans to settle permanently abroad; if anything, it is associated with stronger stated plans to return. At the same time, our realized-return analysis shows that conflict mainly reduces return to the home municipality, with little effect on overall return to Ukraine. This combination suggests that conflict primarily reshapes the timing and location of return (delaying return and/or redirecting it within Ukraine) rather than reducing the underlying willingness to return.

D How Expectations Shape Return Intentions

In our panel regressions, local conflict intensity in the home municipality does not reduce return intentions among respondents who remain abroad (Table 3). Yet average return intentions decline markedly over time in the raw panel (Figure 1). The combination of these findings suggests that the downward trend in intentions is unlikely to be driven solely by changes in *local* conflict conditions at origin.

To shed light on what may be moving intentions over time, we examine refugees' expectations about the war. In several survey waves, we asked respondents about the outcome of the war by the end of 2024. The expectation data show a clear shift toward pessimism. Between September 2022 and January 2023, 71% of respondents expected Ukraine to win and liberate all occupied territories by the end of 2024; by October–November 2023, this share had fallen to 35%. Figure A14 visualizes how respondents moved across expectation categories between the early waves (September 2022–January 2023) and later waves (October–November 2023), and Figure A15 shows that optimism declines in a close-to-linear fashion since January 2023. Over the same period, the share who plan to return (or have already returned) also falls, although more gradually.

We then ask whether changes in expectations are associated with changes in return intentions at the individual level. Using the subset of waves that include the expectations module, we estimate long-difference models relating returns and return intentions to changes in expectations, controlling for respondents' initial return intentions. For ease of interpretation, we summarize expectations with a binary indicator for whether the respondent expects Ukraine to win by the end of 2024 (versus any other response).

Table 4 presents the results. Over time, realized return increases between waves, while return intentions fall. Most importantly, respondents who update their expectations in a negative direction do not return less, but they revise their plans substantially: plans to return fall by 12.3 percentage points, and plans to settle outside Ukraine rise by 4.7 percentage points. Positive updates are associated with higher plans to return, although these estimates are imprecise given the small number of respondents who became more optimistic. Finally, Table 4 quantifies

Table 4: The relation between changes in war expectations and return intentions

	Returned to Ukraine	Return soon or when safe	Settle outside Ukraine
	(1)	(2)	(3)
Time between interviews (100 days)	0.024	-0.048	0.010
	(0.006)	(0.010)	(0.007)
Does not think anymore Ukraine would win	0.010	-0.123	0.047
	(0.017)	(0.027)	(0.018)
Newly thinks Ukraine would win	0.019	0.076	-0.055
	(0.033)	(0.061)	(0.047)
Observations	1,624	1,624	1,624
R-squared	0.086	0.311	0.411
Average dep. var.	0.071	0.480	0.182
Time effect [%]	80	71	55
Expectations effect [%]	5	21	27
Initial return intentions and expectations	✓	✓	✓

Notes: This table shows regression results of return intentions in the second response on time between survey waves and changes in expectations about the outcome of the war. All specifications control for the levels of return intentions and war expectations in the first response. The sample is composed of long differences between the first and last interview across survey waves 2 – 6. We exclude respondents who were located in Ukraine at the time of the first survey response. The outcome variables are binary indicators for whether the respondent (1) has returned, (2) plans to return soon, or (3) plans to settle outside Ukraine in the second response. The mean number of days between survey waves is 242. 29.6% of respondents do not think anymore that Ukraine will win the war and liberate all occupied territories by the end of 2024. We calculate the time effect by multiplying the point estimate on "Time between interviews" by the mean number of days [in 100s] between responses, divided by the mean change in the respective outcome between responses. We calculate the expectations effect by multiplying the point estimate for "Does not think anymore Ukraine would win" and "Newly thinks Ukraine would win" by the mean change in the respective variable between responses, divided by the mean change in the respective outcome between responses. Heteroskedasticity-robust standard errors are shown in parentheses.

the contribution of expectation updating to the overall change in intentions: a single indicator for negative updating accounts for 21% of the change in plans to return and 27% of the change in plans to settle outside Ukraine. These results do not establish causality, but they suggest that deteriorating expectations about the war's trajectory are an important correlate of the aggregate decline in return intentions documented in Figure 1. This complements our earlier findings by showing that the broad decline in return intentions is more closely associated with worsening war expectations over time, whereas local conflict intensity plays little role in the intention regressions.

E Robustness Checks

We run a series of robustness checks to address the main threats to our results: (i) attrition and sample representativeness, (ii) alternative conflict measures and exposure definitions, (iii) sensitivity to functional-form choices, (iv) inference under spatially correlated shocks, and (v) sample composition with respect to occu-

pied versus liberated areas.

Attrition and sample representativeness. Selection into the baseline survey and selective response in follow-up waves could bias both descriptive return rates and our regression estimates. If respondents who are more likely to return are less likely to respond in later waves, observed return rates will be understated. More importantly for identification, estimates could be biased if conflict exposure systematically affects the probability of responding to later waves.

We address this concern in two steps. First, we test directly whether conflict predicts follow-up response by regressing follow-up response outcomes on individual characteristics, baseline return intentions, and our measures of conflict intensity and territorial control. Table A12 shows that respondents with weaker return intentions respond to more waves and are more likely to be included in the short- and long-difference samples, implying that unweighted data understate return rates. Crucially, we find no evidence that conflict intensity or territorial control predicts follow-up response, reducing the risk that our main coefficients are mechanically driven by conflict-induced attrition.

Second, we re-estimate the main regressions using two complementary weighting approaches. We construct inverse probability weights (IPW) from a logit model of follow-up response (see Table A12 for an analysis of the predictors of follow-up response) to correct for differential attrition and re-weight the first-difference samples toward the baseline sample. Applying IPW increases the estimated return rate in the short (long) difference sample from 3.5% (10.0%) to 4.1% (10.9%), consistent with attrition being concentrated among those with stronger return intentions. We also construct population weights using EU Temporary Protection data to align the sample with the broader refugee population in Europe by reweighting observations within sex–age–host-country cells (Appendix Section A.2). Table A13 shows that the estimated effects are quantitatively similar under both IPW and population weights.

Alternative conflict measures and exposure definitions. Our baseline results could be sensitive to how conflict is measured (events versus fatalities; ACLED versus UCDP) or to how exposure is defined (home municipality versus surrounding areas). To address measurement concerns, we re-estimate our specifications using four separate conflict indicators, one at a time: the $\log(x+1)$ number of conflict events in ACLED, the $\log(x+1)$ number of conflict events in UCDP, the $\log(x+1)$ number of fatalities in ACLED, and the $\log(x+1)$ number of fatalities in UCDP (all measured per 30 days between interviews). Figure A16 shows that the resulting estimates are very similar to the baseline results. To address exposure-definition concerns, we expand exposure beyond the home municipality to incorporate conflict in neighbouring municipalities; Figure A17 shows that the main findings are robust to this broader definition.

Functional form. A further concern is that estimated effects may depend on the transformation of conflict intensity. Our preferred specification uses $\log(x+1)$ to allow for diminishing marginal effects. Figure A18 shows that when we

instead use linear conflict measures across different radii, effect sizes are smaller but remain statistically significant. This pattern is consistent with diminishing marginal effects and supports our preferred log specification.

Inference with spatial correlation. Because conflict shocks are spatially correlated, conventional standard errors may overstate precision. We therefore allow for spatial correlation in the error structure using Conley-type standard errors. Figure A19 shows that inference is similar to the baseline.

Sample composition: occupied versus liberated areas. Finally, respondents from areas that remained occupied may differ systematically from those from liberated areas, potentially affecting return behavior and its correlation with conflict measures. Table A14 addresses this concern by excluding respondents from territories occupied prior to 24 February 2022 and from the two easternmost oblasts (Donetsk and Luhansk). The results remain consistent with our baseline findings.

V Conclusion

We provide new evidence from the Ukrainian refugee crisis using a ten-wave panel that links refugees' home municipalities to geocoded conflict and territorial-control data and elicits expectations about the war's trajectory. Return intentions are highly predictive of subsequent behaviour. Our estimates show that conflict at origin mainly reshapes the geography of return: higher local conflict reduces return to the home municipality, while liberation increases home return with a lag, with little effect on return to Ukraine overall. At the same time, intentions to return have weakened, and the rise in plans to settle abroad is closely associated with increasingly pessimistic war expectations.

These findings have implications for return policy and reconstruction planning. First, returns during active conflict are non-trivial and often local, so programs should be designed to accommodate early, potentially large-scale voluntary returns, while recognizing that many refugees will not return quickly. Second, because conflict intensity mainly affects *where* return occurs support needs to be geographically targeted: housing, services, infrastructure, and property-related assistance in origin areas can shift return toward home locations when security allows, whereas a lack of local viability may push returnees to resettle elsewhere in Ukraine. Finally, the decline in return intentions is closely linked to worsening expectations about the war's trajectory, suggesting that credible information and policy commitments about security and reconstruction can influence planned return over and above observable economic conditions.

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A Supplementary material

A.1 Detailed Description of Data

Verian Survey "Voice of Ukraine"

The survey includes a wide range of background variables relating to demographics, employment status, and home municipality. In every wave, we elicit where people are located:

Current location (all waves) *In which country are you currently located?* [drop-down menu]

Respondents answer this question from a list of countries. This list also includes Ukraine, which enables us to identify those who have returned. In several follow-up waves, we ask several additional questions:

Location of return (waves 3, 6–10) *After your return to Ukraine, where do you live now?* With the following answer options:

- In the same village/town/city where I lived before I fled
- In another village/town/city in the same district
- In another district in the same oblast
- In another oblast. If yes, which oblast? (drop-down menu of oblasts)
- Do not know
- Prefer not to answer

We interpret the first response option as a return to the home municipality. In principle, some respondents selecting the second option may also have returned to the same municipality. However, this category may also include individuals who returned to a different municipality within the same district. To remain conservative, we therefore do not classify respondents choosing the second option as having returned to their home municipality. This distinction is largely inconsequential, as only 2% of all returnees across survey waves select the second option, whereas 75% select the first.

Importantly, to elicit return intentions, we ask individuals located outside Ukraine the following question on return intentions in every wave:

Return intentions (all waves) *What are your plans regarding returning back to Ukraine?* With the following answer options:

- I intend to go back very soon
- I intend to go back at some point later when I feel it is safe to return
- I do not intend to go back and plan to settle outside Ukraine
- Do not know yet
- Prefer not to answer

In addition to the aforementioned question and various demographic variables, we use several other questions directly in the main text:

Expectations about the outcome of the war (waves 2–6) *What do you find the most likely outcome of the war by the end of 2024?* With the following answer options:

- Ukraine wins and Russia withdraws from all territory it currently occupies
- Ukraine cedes some territory to Russia as part of peace agreement
- There is ceasefire
- Russia wins and annexes big parts of Ukraine
- The war continues
- Do not know
- Prefer not to answer

Data cleaning and processing

To determine an individual's place of residence before they evacuated during the war, the baseline wave of the survey asks: (i) which region they lived in before February 24, 2022, and (ii) the specific locality through a write-in field. 18% of respondents did not answer the latter question. To match individuals with the municipality (Ukrainian: hromada) of their residence before the war, we utilize geospatial data on Ukraine's administrative divisions as of 2020 from the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA)

(United Nations, 2023). The average municipality has 30,800 inhabitants, and the median has 13,200. Larger cities comprise a single municipality. The spatial files encompass all 1,469 municipalities, nested in 137 districts (raions) across 27 regions (oblasts) and six macro-regions. These localities generally align with administrative divisions, but for 550 individuals, the localities had to be manually matched to municipalities within the specified regions. Localities were classified into municipalities using the Ukrainian government website `https://gromada.info/`. However, since not all region-municipality pairs are unique, we were unable to assign a unique municipality to 12 respondents, and thus classified their municipality as missing.

ACLED and UCDP: conflict intensity

To obtain measures of local conflict intensity, we use the Armed Conflict Location Event Data Project (ACLED) (Raleigh et al., 2010) and the Uppsala Conflict Data Program's Georeferenced Event Dataset (UCDP-GED) 25.1 (Sundberg and Melander, 2013) databases.

ACLED and UCDP collect news reports of conflict data that are human-coded using standardized methods and, if possible, geocode the event. ACLED records relevant events, including violence, which happened at a specific place and time, and are documented in a publicly available source. ACLED includes the primary actor, the type of conflict, and the number of reported fatalities, among others. UCDP-GED is also an event-level dataset, but with the strict inclusion criterion that at least one death should have been recorded.[10]

In many cases, death tolls are estimates and may vary between UCDP and ACLED for the same event. Death tolls may not be known or may be measured with error. Furthermore, the events may also be included in less severe instances (especially for ACLED), but on average, may provide a reasonable summary measure of conflict. Although this introduces some measurement error, Ukrainian refugees may be no better informed than what ACLED and UCDP can infer from news reports. Because of these concerns, we use both the number of events as well as the number of deaths from both ACLED and UCDP in the following analysis.

[10] Raleigh and Kishi (2019) compare different conflict datasets and show that in the case of the 2018 conflict in Donbas, Ukraine, ACLED and UCDP give more plausible results than automated conflict datasets. Therefore, we do not use these datasets. They also find that ACLED captures more events that only appeared in non-English speaking media than UCDP, which is an advantage of ACLED in the current context.

Between February 24, 2022, and May 28, 2025, ACLED recorded 85,298 events and 61,446 fatalities, while UCDP recorded 11,099 events and 157,015 fatalities. In the following analysis, we only use events that are exactly geocoded or geocoded at the municipality level. This drops less than 1% of the events in ACLED and 15% of the events in UCDP.

We construct a measure of conflict intensity separately for each sample so that a one–standard-deviation change is defined within the same sample. For each first difference in the data (short or long), we calculate the number of events and deaths in both ACLED and UCDP per 30 days between the fielding dates of the respective survey waves. We use survey wave fielding dates rather than individual response dates to avoid endogeneity arising from within-wave response timing.

We then apply the $log(x + 1)$ transformation to all four measures. Because these variables capture similar aspects of local conflict intensity and are strongly correlated,[11] we combine them using principal component analysis and use the standardized first principal component, $Conflict_{mt_1t_2}$.[12]

ISW: Territorial control

To capture whether an individual's home district is under Ukrainian control, contested by fighting, or occupied by Russian forces, we construct a daily dataset of the position of the front line. To construct the dataset, we draw on the (almost) daily updated maps of the war in Ukraine provided by the Institute for the Study of War (ISW) between June 2022 and May 2025 (Institute for the Study of War, The Critical Threats Project, 2023). Since the start of the war, ISW has been providing reports with maps visualizing the state of the war based on publicly available information sourced from news outlets, social media, and satellite imagery. Importantly, these maps include a line approximately indicating the front line of the conflict. The constructed dataset is on the district level (average size of 4,406 km2) rather than the municipality level (average size of 342 km2). This makes it possible to realistically capture meaningful changes in the position of the front line with respect to the locality of origin. As municipalities are relatively small, a municipality may be liberated but an adjacent municipality could still be on the front line. By using the district as the level of analysis, we are better able

[11] Pairwise correlations range from 0.69 to 0.77.

[12] On the long difference sample, the loadings of the first principal component are 0.47 for ACLED events, 0.50 for ACLED deaths, 0.55 for UCDP events, and 0.47 for UCDP deaths.

to capture whether localities' status changes from the zone of conflict to being firmly under Ukrainian control. For instance, upon the withdrawal of Russian forces and advancements achieved by the Ukrainian military, several districts in the Kharkiv region were liberated.

We proceed by classifying districts in one of the following two categories:

1) The district is marked as "Under Ukrainian control" if the full district is under control of the Ukrainian government.

2) The district is marked as "Occupied" if any area inside the district is occupied by Russian forces.

Based on these two statuses, we can identify changes in a district's control between two dates. We also classify districts by their status prior to the first date, distinguishing, for example, between districts that were never occupied and those that had been liberated and remained liberated. Table A3 reports the prevalence of these levels and transitions for both the full sample and the restricted first-differences sample.

A.2 Reweighting

We calculate survey weights to make our results more representative of (i) our baseline sample and (ii) the whole population of Ukrainian refugees. For (i), we estimate a logit model using the same sample and controls as column 2 of Table A12 and we obtain predictions of the probability that an individual answers in a given short and long-difference pair w-w'. To calculate the inverse probability weight of every observation, we invert the predicted probability from the logit model.

The weights for (ii) are obtained by taking the weights obtained for (i) and multiplying those by the inverse sampling rate. The inverse sampling rate is given by the number of registered Ukrainian refugees per sex–age bin–destination country cell in December 2022, divided by the number of respondents per cell in the baseline wave. For several of these bins, we have zero respondents in our survey and no data to weight. These are males 18-34 in Iceland, Luxembourg, and Malta, 35-64 in Denmark and Iceland, and 65+ in Denmark, Estonia, Luxembourg, Norway, and Cyprus. For Hungary, Moldova, and the United Kingdom, we do not have detailed information on the number of refugees by cell, so we weight these observations only for the whole country.

Table A1: Survey waves, number of respondents and timing

Wave	N	First month	Last month	Place of return
1	11,783	June 2022	December 2022	-
2	1,005	September 2022	December 2022	✗
3	1,610	January 2023	January 2023	✓
4	1,411	April 2023	April 2023	✗
5	1,218	July 2023	July 2023	✗
6	1,175	October 2023	November 2023	✓
7	1,112	February 2024	February 2024	✓
8	1,027	June 2024	July 2024	✓
9	961	October 2024	November 2024	✓
10	970	April 2025	May 2025	✓
Total	22,272	June 2022	May 2025	✓

Notes: Number of respondents by wave and first and last interview month per wave. 6,299 wave 1 respondents agreed to be recontacted for follow-up surveys. As wave 2 has been fielded before the end of the baseline survey wave, not all respondents had the opportunity to answer wave 2, which explains the low number of responses. The last column indicates whether or not the place of return in Ukraine is elicited.

Table A2: Number of answered survey waves per respondent

	Number of respondents
Number of waves	
1	8,754
2	992
3	528
4	293
5	255
6	226
7	196
8	196
9	223
10	120
Total	11,783

Notes: Number of unique respondents by the number of waves they have answered.

Table A3: (Changes in) territorial control for the short- and long-difference samples

	short difference		long difference	
	full	waves with return location	full	waves with return location
Remain occupied	0.21	0.21	0.25	0.27
Liberated between interviews	0.05	0.06	0.11	0.10
Remain liberated	0.43	0.41	0.34	0.34
Occupied again between interviews	0.02	0.03	0.00	0.01
Never occupied	0.29	0.29	0.29	0.29
Observations	8698	5769	2484	2084

Notes: Share of observations by (change in) territorial control for the short difference and long difference sample, full and with return location.

Table A4: Demographic characteristics of the main samples

	Baseline	short difference	long difference
Controls:			
Male	0.11	0.13	0.11
Age 18-24	0.05	0.04	0.04
Age 25-34	0.20	0.21	0.21
Age 35-44	0.27	0.33	0.31
Age 45-54	0.22	0.23	0.23
Age 55-59	0.08	0.06	0.06
Age 60-65	0.10	0.09	0.09
Age 65+	0.08	0.05	0.06
Married or partner	0.56	0.57	0.57
Left behind: partner	0.24	0.25	0.27
Left behind: children	0.17	0.16	0.16
With children under 18	0.56	0.58	0.60
Tertiary educated	0.66	0.74	0.73
Speaks English	0.40	0.49	0.47
Answered in Russian	0.10	0.09	0.11
Large city (>500k)	0.59	0.58	0.61
Small city (50-500k)	0.26	0.29	0.30
Small town, village or rural (<50k)	0.15	0.13	0.09
Municipal population [1000s]	1062	1108	1150
Distance between municipality and host country [km]	1516	1567	1537
Continued job in Ukraine remotely	0.15	0.18	0.18
Left before the 24th of February 2022	0.06	0.07	0.06
Days between responses (full)		163	566
Days between responses (with return location)		229	628
Return intentions:			
Baseline: return soon	0.07	0.04	0.05
Baseline: return when safe	0.57	0.55	0.58
Baseline: settle outside Ukraine	0.08	0.12	0.10
Baseline: do not know	0.24	0.27	0.25
Baseline: prefer no answer	0.03	0.02	0.02
First response: return soon		0.05	0.05
First response: return when safe		0.51	0.58
First response: settle outside Ukraine		0.17	0.10
First response: do not know		0.25	0.25
First response: prefer no answer		0.01	0.02
Second response: return soon		0.05	0.05
Second response: return when safe		0.46	0.41
Second response: settle outside Ukraine		0.20	0.18
Second response: do not know		0.25	0.25
Second response: prefer no answer		0.01	0.01
Observations	11783	8698	2484

Notes: Descriptive statistics of all individual-level controls and return intentions in the baseline, short difference and long difference estimation sample for whom information on the home municipality and controls are non-missing.

Table A5: Demographic characteristics of the main samples compared to registry data

	Dataset			
	Baseline	short difference (full)	long difference (full)	TPS (Eurostat)
Female	0.88	0.87	0.89	0.78
18 - 34	0.26	0.24	0.25	0.38
35 - 64	0.65	0.70	0.69	0.53
65 and older	0.08	0.05	0.06	0.08
Czechia	0.05	0.04	0.04	0.10
Germany	0.23	0.28	0.27	0.18
Italy	0.05	0.04	0.04	0.03
Poland	0.28	0.23	0.25	0.36
Spain	0.04	0.04	0.04	0.04
Other	0.33	0.34	0.33	0.29
N	11,783	8,698	2,484	4,377,305

Notes: Gender, age, and destination country distribution of all baseline survey respondents, those in the full short and long difference sample and beneficiaries of Temporary Protection Status (TPS) by December 2022. Data on TPS registrations originates from Eurostat table *migr_asytpfq*. For detailed descriptive statistics of the baseline, short difference and long difference samples, see Table A4.

Table A6: The effect of conflict on moving to a third country

Outcome:	Moved to other country outside Ukraine	
	short difference	long difference
	(1)	(2)
Conflict intensity (1 SD)	0.003	-0.001
	(0.002)	(0.006)
Remain occupied	ref.	ref.
Liberated between interviews	-0.001	-0.014
	(0.010)	(0.010)
Remain liberated	-0.000	-0.011
	(0.007)	(0.025)
Never occupied	0.004	0.016
	(0.007)	(0.016)
Observations	8,698	2,484
R-squared	0.059	0.108
Average dep. var.	0.022	0.062
Full baseline controls	✓	✓

Notes: This table shows regression results from equation 1 for whether a respondent moved to another host country, using the full short-difference (column 1) and long-difference (column 2) samples. For details on the specification, controls, and data, see the notes to Table 2. Standard errors clustered at the district level are reported in parentheses.

Table A7: The effect of conflict on mobility (short difference)

Panel A: **Returned (full sample)**	(1)	(2)	(3)	(4)	(5)
Conflict intensity (1 SD)	-0.005	-0.002	-0.003	-0.002	-0.004
	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)
Remain occupied	ref.	ref.	ref.	ref.	
Liberated between interviews	0.017	0.012	0.008	0.008	
	(0.009)	(0.010)	(0.010)	(0.010)	
Remain liberated	0.000	0.007	0.001	0.001	
	(0.007)	(0.005)	(0.007)	(0.007)	
Never occupied	0.004	0.008	0.002	-0.000	
	(0.006)	(0.005)	(0.008)	(0.008)	
Observations	8,698	8,698	8,698	8,698	8,631
R-squared	0.117	0.133	0.148	0.148	0.178
Average dep. var.	0.034	0.034	0.034	0.034	0.034
Panel B: **Returned to home municipality in Ukraine**	(1)	(2)	(3)	(4)	(5)
Conflict intensity (1 SD)	-0.010	-0.006	-0.008	-0.008	-0.014
	(0.004)	(0.002)	(0.002)	(0.002)	(0.004)
Remain occupied	ref.	ref.	ref.	ref.	
Liberated between interviews	0.015	0.012	0.008	0.007	
	(0.011)	(0.012)	(0.012)	(0.012)	
Remain liberated	0.014	0.019	0.016	0.016	
	(0.008)	(0.008)	(0.009)	(0.009)	
Never occupied	0.012	0.017	0.010	0.007	
	(0.007)	(0.006)	(0.009)	(0.009)	
Observations	5,769	5,769	5,769	5,769	5,769
R-squared	0.072	0.091	0.115	0.115	0.147
Average dep. var.	0.030	0.030	0.030	0.030	0.030
Panel C: **Returned elsewhere in Ukraine**	(1)	(2)	(3)	(4)	(5)
Conflict intensity (1 SD)	-0.001	0.002	0.002	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Remain occupied	ref.	ref.	ref.	ref.	
Liberated between interviews	0.006	0.009	0.010	0.009	
	(0.006)	(0.007)	(0.007)	(0.007)	
Remain liberated	-0.010	-0.008	-0.008	-0.009	
	(0.005)	(0.005)	(0.006)	(0.007)	
Never occupied	-0.011	-0.008	-0.008	-0.011	
	(0.003)	(0.004)	(0.005)	(0.006)	
Observations	5,769	5,769	5,769	5,769	5,769
R-squared	0.019	0.031	0.046	0.046	0.150
Average dep. var.	0.010	0.010	0.010	0.010	0.010
Initial return intentions and geographic controls	✓	✓	✓	✓	✓
Survey timing FE		✓	✓	✓	✓
Individual controls			✓	✓	✓
Prior conflict				✓	✓
Municipality FE					✓

Notes: This table shows regression results of equation 1 for three different outcomes on the short difference sample: A) whether a respondent has returned to Ukraine, B) whether a respondent has returned to their home municipality, and C) whether a respondent has returned to another place in Ukraine. A) relies on the sample of all short difference and B) and C) rely on all short differences between survey waves in which the place of return was elicited. Conflict intensity is measured at the municipality level, and changes in territorial control are measured on the district level. Column 1 only controls for return intentions during the first response, settlement type dummies, population, and population squared. Column 2 includes additional controls for the week of the first and second interview, Column 3 for individual characteristics, the week of leaving Ukraine, and initial host country fixed effects, and Column 4 for prior conflict between the start of the conflict and the baseline interview. Column 5 additionally controls for municipality fixed effects; as this absorbs most variation in changes in territorial control, we do not show estimates for those. Standard errors, clustered at the district level, are shown in parentheses.

Table A8: The effect of conflict on mobility (long difference)

Panel A: **Returned (full sample)**	(1)	(2)	(3)	(4)
Conflict intensity (1 SD)	-0.028	-0.010	-0.012	-0.010
	(0.009)	(0.006)	(0.006)	(0.007)
Remain occupied	ref.	ref.	ref.	ref.
Liberated between interviews	0.024	0.049	0.043	0.044
	(0.014)	(0.011)	(0.012)	(0.012)
Remain liberated	-0.014	0.022	0.010	0.012
	(0.032)	(0.031)	(0.032)	(0.032)
Never occupied	-0.022	0.012	-0.007	-0.026
	(0.016)	(0.011)	(0.014)	(0.018)
Observations	2,084	2,084	2,084	2,084
R-squared	0.081	0.109	0.162	0.163
Average dep. var.	0.095	0.095	0.095	0.095

Panel B: **Returned to home municipality in Ukraine**	(1)	(2)	(3)	(4)
Conflict intensity (1 SD)	-0.027	-0.013	-0.015	-0.015
	(0.008)	(0.004)	(0.004)	(0.004)
Remain occupied	ref.	ref.	ref.	ref.
Liberated between interviews	0.049	0.069	0.060	0.060
	(0.024)	(0.023)	(0.020)	(0.021)
Remain liberated	0.023	0.053	0.037	0.037
	(0.029)	(0.028)	(0.030)	(0.030)
Never occupied	0.019	0.046	0.023	0.015
	(0.015)	(0.012)	(0.014)	(0.016)
Observations	2,084	2,084	2,084	2,084
R-squared	0.084	0.108	0.160	0.160
Average dep. var.	0.075	0.075	0.075	0.075

Panel C: **Returned elsewhere in Ukraine**	(1)	(2)	(3)	(4)
Conflict intensity (1 SD)	-0.001	0.003	0.004	0.005
	(0.005)	(0.006)	(0.006)	(0.006)
Remain occupied	ref.	ref.	ref.	ref.
Liberated between interviews	-0.025	-0.019	-0.016	-0.016
	(0.013)	(0.016)	(0.017)	(0.017)
Remain liberated	-0.036	-0.031	-0.027	-0.026
	(0.012)	(0.013)	(0.013)	(0.014)
Never occupied	-0.041	-0.033	-0.030	-0.041
	(0.007)	(0.008)	(0.008)	(0.013)
Observations	2,084	2,084	2,084	2,084
R-squared	0.025	0.045	0.083	0.084
Average dep. var.	0.020	0.020	0.020	0.020
Initial return intentions and geographic controls	✓	✓	✓	✓
Survey timing FE		✓	✓	✓
Individual controls			✓	✓
Prior conflict				✓

Notes: This Table shows regression results of equation 1 for three different outcomes on the long difference sample: A) whether a respondent has returned to Ukraine, B) whether a respondent has returned to their home municipality, and C) whether a respondent has returned to another place in Ukraine. A) relies on the sample of all short difference and B) and C) rely on all short differences between survey waves in which the place of return was elicited. Conflict intensity is measured at the municipality level, and changes in territorial control are measured on the district level. Column 1 only controls for return intentions during the first response, settlement type dummies, population, and population squared. Column 2 includes additional controls for the week of the first and second interview, Column 3 for individual characteristics, the week of leaving Ukraine, and initial host country fixed effects, and Column 4 for prior conflict between the start of the conflict and the baseline interview. Column 5 additionally controls for municipality fixed effects; as this absorbs most variation in changes in territorial control, we do not show estimates for those. Standard errors, clustered at the district level, are shown in parentheses.

Table A9: Heterogeneity by initial return intentions

	Returned to Ukraine	Returned to home municipality	Returned elsewhere
Panel A: **Short differences**			
	(1)	(2)	(3)
Conflict intensity (1 SD) × Return soon	-0.012	-0.045	0.007
	(0.023)	(0.014)	(0.014)
Conflict intensity (1 SD) × Return when safe	-0.004	-0.011	0.002
	(0.003)	(0.003)	(0.003)
Conflict intensity (1 SD) × Don't know	-0.001	-0.001	0.003
	(0.002)	(0.002)	(0.002)
Conflict intensity (1 SD) × Settle outside Ukraine	0.002	-0.002	0.003
	(0.002)	(0.003)	(0.002)
Observations	8,698	5,769	5,769
R-squared	0.148	0.118	0.046
Average dep. var.	0.034	0.030	0.010
Panel B: **Long differences**			
	(1)	(2)	(3)
Conflict intensity (1 SD) × Return soon	-0.050	-0.067	-0.014
	(0.033)	(0.028)	(0.017)
Conflict intensity (1 SD) × Return when safe	-0.009	-0.024	0.008
	(0.010)	(0.007)	(0.007)
Conflict intensity (1 SD) × Don't know	0.004	0.006	0.003
	(0.008)	(0.005)	(0.006)
Conflict intensity (1 SD) × Settle outside Ukraine	0.019	0.018	0.000
	(0.010)	(0.008)	(0.005)
Observations	2,484	2,084	2,084
R-squared	0.162	0.165	0.085
Average dep. var.	0.101	0.075	0.020
Full baseline controls	✓	✓	✓

Notes: This table reports estimates from equation 1 for the short- and long-difference samples, interacting conflict intensity with baseline return intentions. All columns follow the specification of Table 2 but add interactions between conflict intensity and the levels of first-interview return intentions. For details on the specification, controls, and data, see the notes to Table 2. Standard errors clustered at the district level are reported in parentheses.

Table A10: The effect of conflict on return by region

Outcome	Returned to home municipality		Returned elsewhere	
	South and East Ukraine	North, West and Central Ukraine	South and East Ukraine	North, West and Central Ukraine
Panel A: **short difference**	(1)	(2)	(3)	(4)
Conflict intensity (1 SD)	-0.007	-0.025	0.002	0.001
	(0.003)	(0.009)	(0.004)	(0.003)
Observations	3,061	2,701	3,061	2,701
R-squared	0.127	0.155	0.070	0.064
Average dep. var.	0.022	0.039	0.013	0.006
Panel B: **long difference**	(1)	(2)	(3)	(4)
Conflict intensity (1 SD)	-0.019	-0.042	0.009	0.004
	(0.007)	(0.032)	(0.008)	(0.011)
Observations	1,112	961	1,112	961
R-squared	0.174	0.253	0.123	0.191
Average dep. var.	0.057	0.097	0.030	0.009

Notes: This table reports estimates from equation 1 for the same specification as Table 2, but splitting the sample by region of origin (South and East Ukraine versus North, West, and Central Ukraine). For details on the specification, controls, and data, see the notes to Table 3. Standard errors clustered at the district level are reported in parentheses.

Table A11: The effect of conflict on return intentions including returnees

	Returned, return soon or when safe	Settle outside Ukraine
Panel A: **Short differences**		
	(1)	(2)
Conflict intensity (1 SD)	0.014	-0.001
	(0.007)	(0.005)
Remain occupied	ref.	ref.
Liberated between interviews	0.009	0.006
	(0.024)	(0.017)
Remain liberated	0.017	0.008
	(0.019)	(0.014)
Never occupied	-0.019	0.002
	(0.023)	(0.016)
Observations	8,698	8,698
R-squared	0.430	0.491
Average dep. var.	0.542	0.198
Panel B: **Long differences**		
	(1)	(2)
Conflict intensity (1 SD)	0.017	-0.005
	(0.013)	(0.010)
Remain occupied	ref.	ref.
Liberated between interviews	0.037	-0.029
	(0.034)	(0.025)
Remain liberated	0.007	0.019
	(0.041)	(0.034)
Never occupied	-0.041	-0.001
	(0.038)	(0.031)
Observations	2,660	2,660
R-squared	0.320	0.316
Average dep. var.	0.555	0.184

Notes: This table reports estimates from equation 1 using the same specification as Columns 1 and 2 of Table 3, but including respondents who have returned by the second interview. Returnees are coded as 1 in Column 1 and 0 in Column 2. For details on the specification, controls, and data, see the notes to Table 3. Standard errors clustered at the district level are reported in parentheses.

Table A12: Predictors of follow-up response

	(1) Number of waves	(2) short difference $\beta \times 100$	(3) long difference $\beta \times 100$
Return very soon	-0.240	-0.065	-0.423
	(0.103)	(0.075)	(0.152)
Return when safe	ref.	ref.	ref.
Do not know	0.112	0.076	0.204
	(0.052)	(0.052)	(0.103)
Settle outside Ukraine	0.314	0.335	0.455
	(0.073)	(0.096)	(0.163)
Prefer not to answer	-0.051	0.021	-0.240
	(0.156)	(0.112)	(0.242)
Male	0.251	0.189	0.265
	(0.074)	(0.079)	(0.143)
Tertiary educated	0.268	0.238	0.324
	(0.052)	(0.043)	(0.093)
Speaks English	0.207	0.143	0.447
	(0.050)	(0.050)	(0.099)
Conflict intensity (1 SD)	-0.012	-0.044	-0.042
	(0.034)	(0.028)	(0.077)
Remain occupied	ref.	ref.	ref.
Liberated between interviews	0.047	0.036	-0.435
	(0.137)	(0.086)	(0.340)
Remain liberated	0.058	-0.074	-0.040
	(0.118)	(0.090)	(0.218)
Never occupied	-0.152	-0.110	-0.191
	(0.121)	(0.101)	(0.231)
Observations	9616	424629	77769
Average dependent variable	0.960	0.022	0.034
Estimator:	Poisson	OLS	OLS

Notes: This table shows Poisson estimates on the number of waves answered by individual (column 1) and OLS estimates on whether an individual answers in a given full short- or long-difference (columns 2 and 3), on the sample of all possible short- and long difference, respectively. For the short difference sample, with $N = 10$ waves this means $N(N-1)/2 = 45$ observations per individual. For the long difference sample, this means $N - 1$ observations per individual. All models use the same controls as the models shown in Table 2. Only individuals without missing covariate values are included in the analysis. Measures of conflict and controls for timing are imputed for non-respondents by drawing a date from the empirical distribution of follow-up response dates, and calculating measures of territorial control and conflict in the same way as for respondents. Standard errors clustered at the district level are shown in parentheses.

Table A13: Robustness test: inverse probability and population weights

Panel A: **short difference**	Returned to Ukraine		Return to home municipality		Return elsewhere in Ukraine	
	(1)	(2)	(3)	(4)	(5)	(6)
Conflict intensity (1 SD)	-0.002	-0.003	-0.009	-0.009	0.005	0.005
	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Remain occupied	ref.	ref.	ref.	ref.	ref.	ref.
Liberated between interviews	0.015	0.014	0.018	0.014	0.018	0.015
	(0.011)	(0.015)	(0.014)	(0.017)	(0.010)	(0.009)
Remain liberated	0.004	-0.005	0.028	0.022	-0.005	0.002
	(0.009)	(0.013)	(0.011)	(0.016)	(0.009)	(0.008)
Never occupied	0.004	0.004	0.019	0.014	-0.005	0.007
	(0.011)	(0.011)	(0.012)	(0.015)	(0.010)	(0.009)
Observations	8,698	8,691	5,769	5,764	5,769	5,764
R-squared	0.154	0.203	0.139	0.232	0.076	0.103
Average dep. var.	0.041	0.040	0.036	0.037	0.013	0.012
Panel B: **long difference**						
	(1)	(2)	(3)	(4)	(5)	(6)
Conflict intensity (1 SD)	-0.006	-0.002	-0.016	-0.018	0.004	0.007
	(0.008)	(0.009)	(0.005)	(0.007)	(0.006)	(0.005)
Remain occupied	ref.	ref.	ref.	ref.	ref.	ref.
Liberated between interviews	0.051	0.037	0.059	0.036	-0.016	-0.008
	(0.014)	(0.019)	(0.018)	(0.023)	(0.020)	(0.013)
Remain liberated	-0.004	0.031	0.043	0.062	-0.041	-0.020
	(0.035)	(0.048)	(0.035)	(0.043)	(0.015)	(0.011)
Never occupied	-0.013	0.022	0.013	0.024	-0.042	-0.016
	(0.017)	(0.023)	(0.018)	(0.024)	(0.013)	(0.011)
Observations	2,484	2,484	2,084	2,084	2,084	2,084
R-squared	0.176	0.225	0.185	0.273	0.095	0.093
Average dep. var.	0.109	0.113	0.086	0.093	0.022	0.019
Full baseline controls	✓	✓	✓	✓	✓	✓
Weights	IPW	IPW and population	IPW	IPW and population	IPW	IPW and population

Notes: This table reports weighted estimates of equation 1 for return to Ukraine, return to the home municipality, and return elsewhere in Ukraine, using the short-difference sample (Panel A) and the long-difference sample (Panel B). All columns follow the specification in Table 2 but apply different weights. Odd columns use inverse probability weights (IPW) based on a logit model of follow-up response, and even columns use the product of IPW and population weights that match the sample to the distribution of refugees across sex–age–host-country cells using Eurostat data. For details, see Appendix Section A.2. Standard errors clustered at the district level are reported in parentheses.

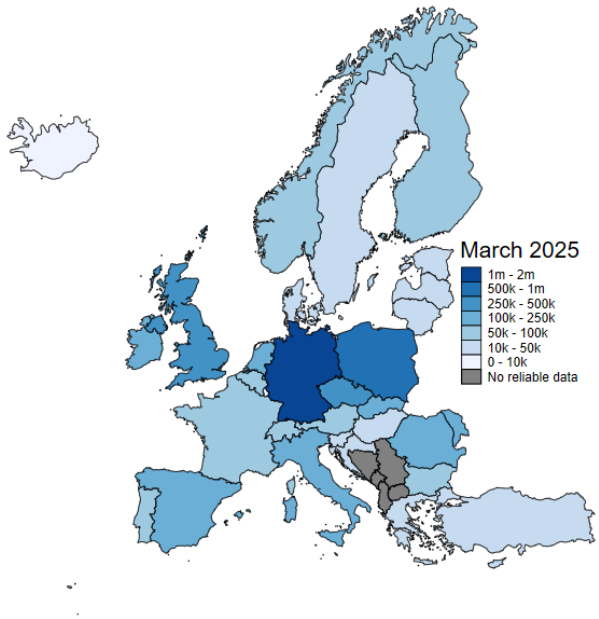
Table A14: Robustness test: omitting selected occupied areas

Sample:	Returned to home municipality		
	Long difference	Without respondents from:	
		Previously occupied territories	Donetsk and Luhansk
	(1)	(2)	(3)
Conflict intensity (1 SD)	-0.015	-0.015	-0.013
	(0.004)	(0.005)	(0.007)
Remain occupied	ref.	ref.	ref.
Liberated between interviews	0.060	0.058	0.059
	(0.021)	(0.019)	(0.019)
Remain liberated	0.037	0.037	0.037
	(0.030)	(0.030)	(0.030)
Never occupied	0.015	0.012	0.005
	(0.016)	(0.017)	(0.020)
Observations	2,084	2,014	1,860
R-squared	0.160	0.164	0.175
Average dep. var.	0.075	0.077	0.083

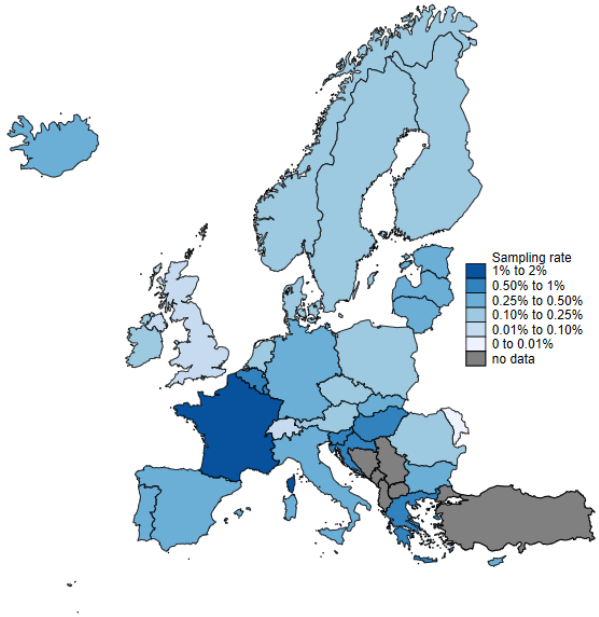
Notes: This table reports estimates from equation 1 for the long-difference sample. Column 2 excludes respondents from territories that were already occupied prior to 24 February 2022, and Column 3 excludes respondents from Donetsk and Luhansk oblasts. For details on the specification, controls, and data, see the notes to Table 2. Standard errors clustered at the district level are reported in parentheses.

Figure A1. : Number and sampling rate of Ukrainian refugees

(a) Number of Ukrainian refugees across Europe

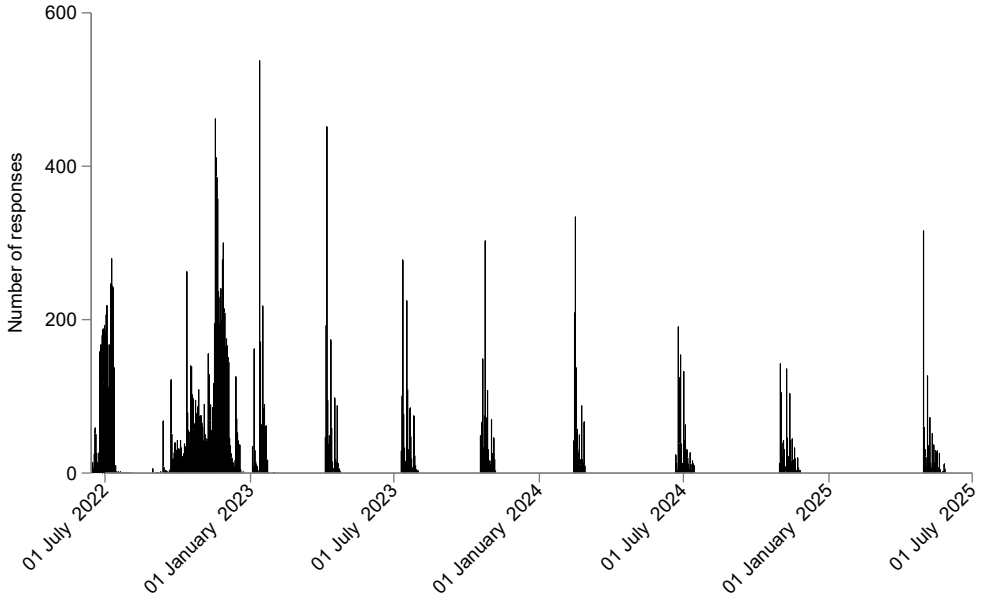


(b) Sampling rate of Ukrainian refugees across Europe



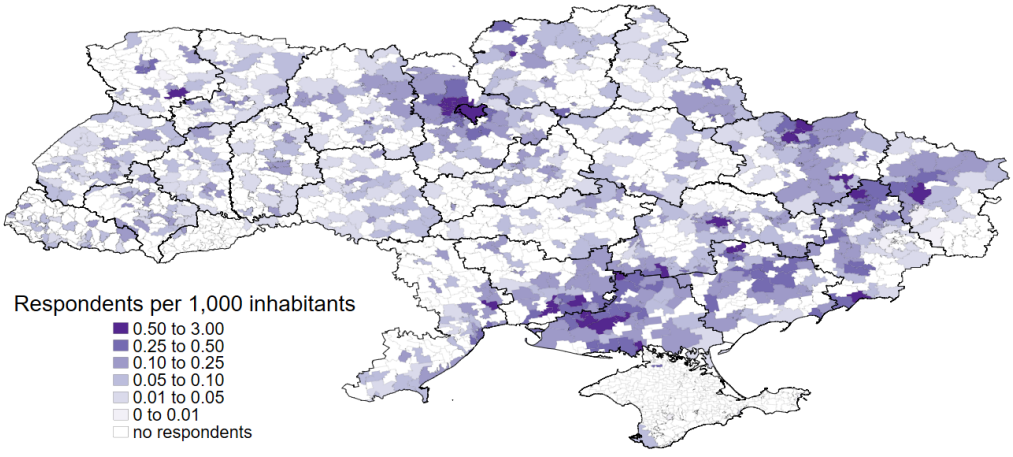
Notes: Panel (a) shows the number of Ukrainian refugees who are beneficiaries of Temporary Protection Status by December 2022, by host country. Data from the Eurostat table *migr_asytpsm*. Panel (b) shows the sampling rate of Ukrainian refugees from across European countries. Obtained by dividing the total number of respondents in the baseline wave by the initial destination country by the total beneficiaries in December 2022 from the Eurostat table *migr_asytpsm*.

Figure A2. : Distribution of the dates of interview



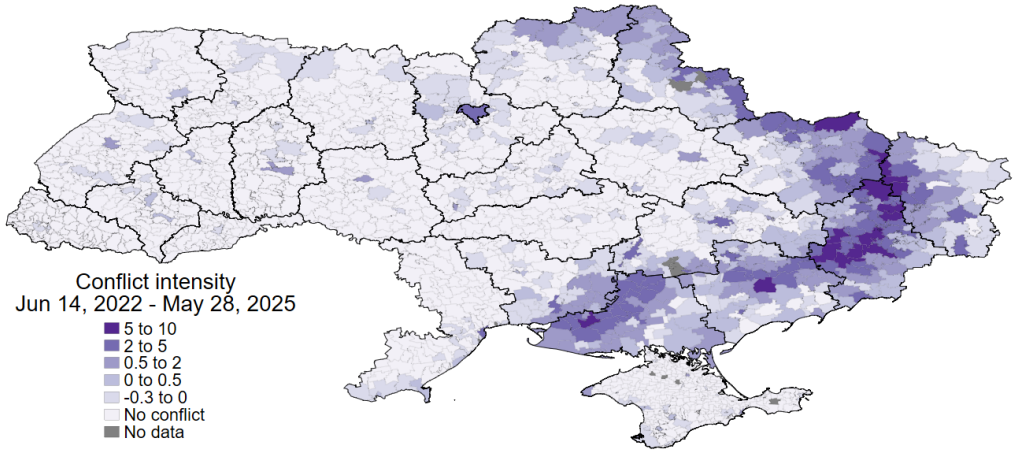
Notes: Distribution of the timing of all interviews for all ten survey waves. Every bin represents one day. N = 22,272.

Figure A3. : Home municipalities of respondents



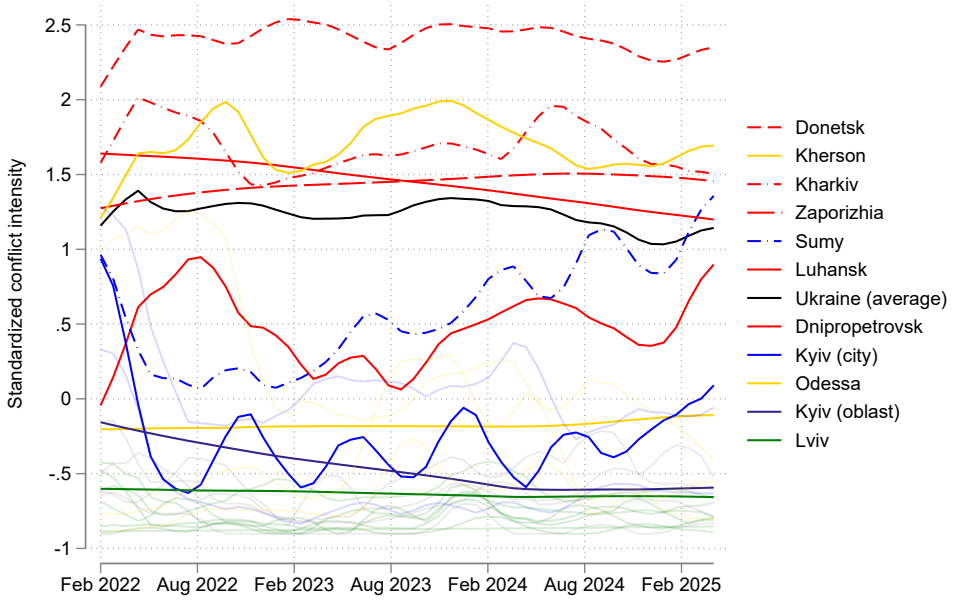
Notes: Distribution of respondents by home municipality in Ukraine. Excludes those respondents for whom no home municipality could be uniquely determined. N = 9,677.

Figure A4. : Conflict intensity on the municipality level between the first and last interview days



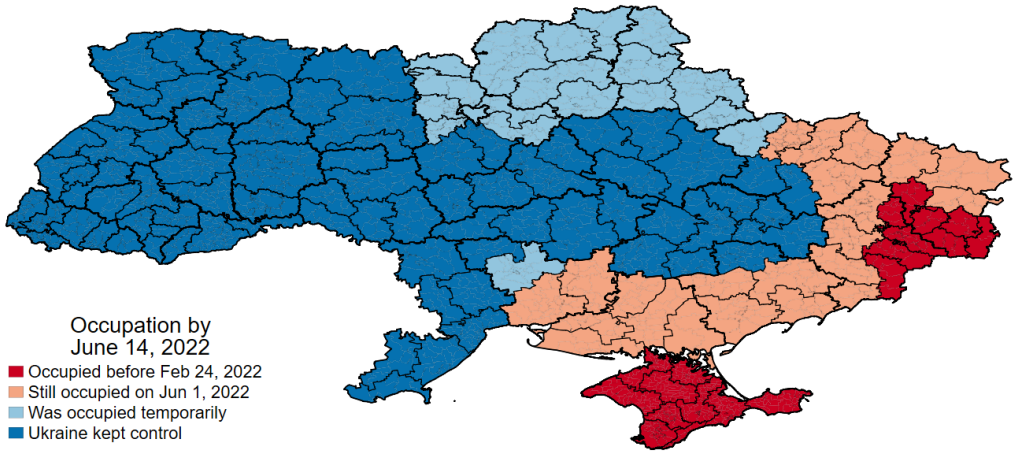
Notes: This figure shows the first principal component of conflict intensity across home municipalities in Ukraine.

Figure A5. : Conflict intensity over time across oblasts of Ukraine



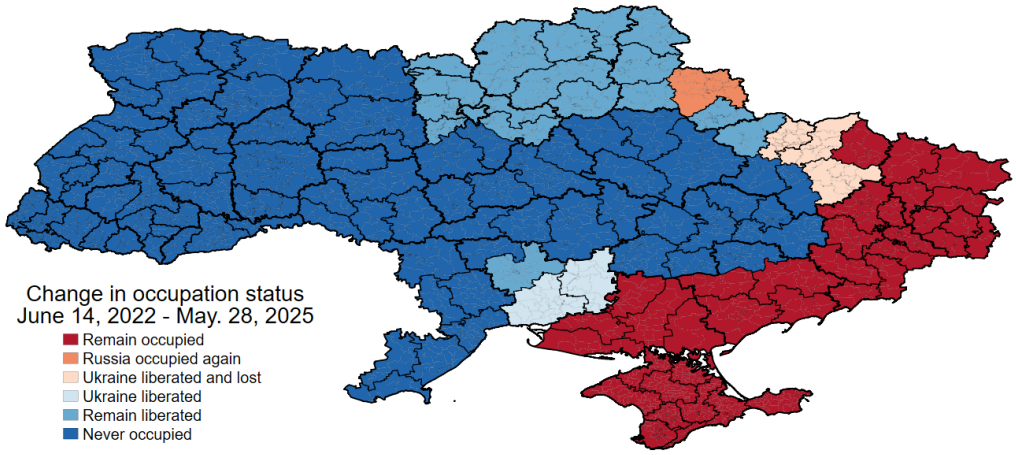
Notes: Smoothened polynomial line plot of conflict intensity across the oblasts of Ukraine between February 2022 and April 2025, with an Epanechnikov kernel of 1 month. We calculate conflict intensity analogously to the measure used in the regression analysis: we aggregate the 4 UCDP and ACLED-based measures of conflict intensity on the oblast-month level, take the log(x+1) transformation, calculate the principal component, and standardize the principal component. We highlight the oblasts with the highest conflict intensity, as well as Kyiv (city and oblast), Lviv, and Odessa, and ordered them according to conflict intensity in the last full month (April 2025). We group oblasts by macro-region (west: green, north: blue, middle: gray, south: gold, and east: red), where the city of Kyiv is included in "north".

Figure A6. : Territorial control before the first survey wave



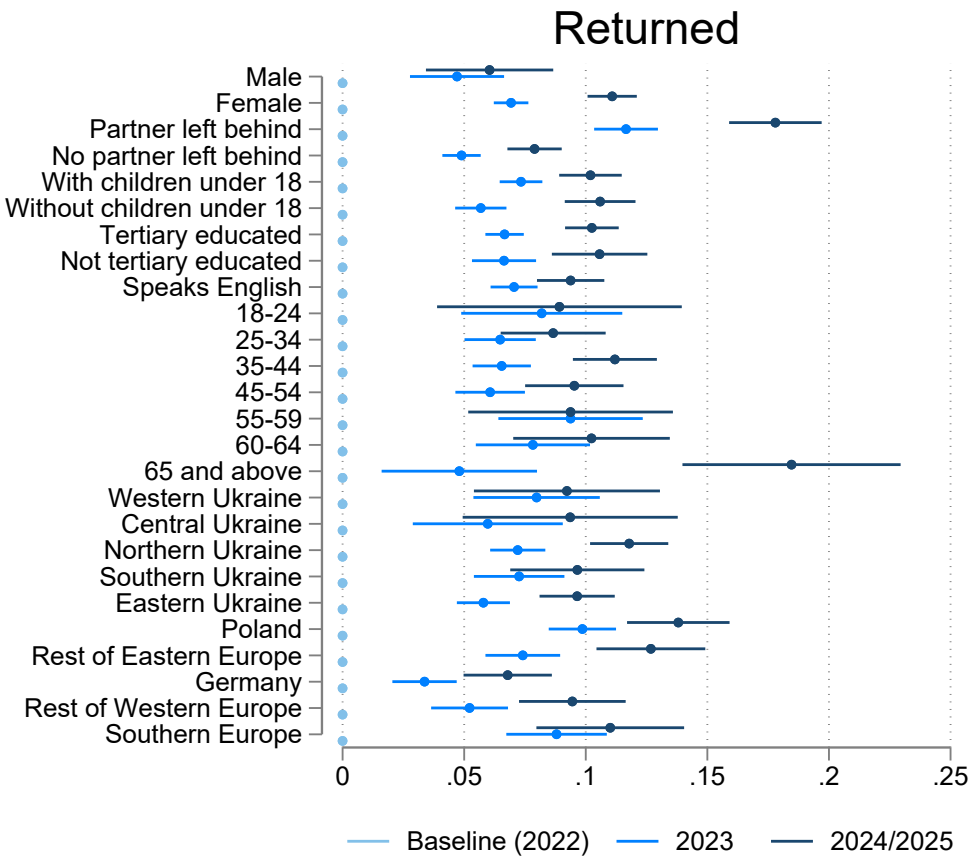
Notes: This figure shows the territorial control before the first interview (June 14, 2022). Occupied districts are either partially or fully occupied.

Figure A7. : Change in territorial control on the district level between the first and last interview days



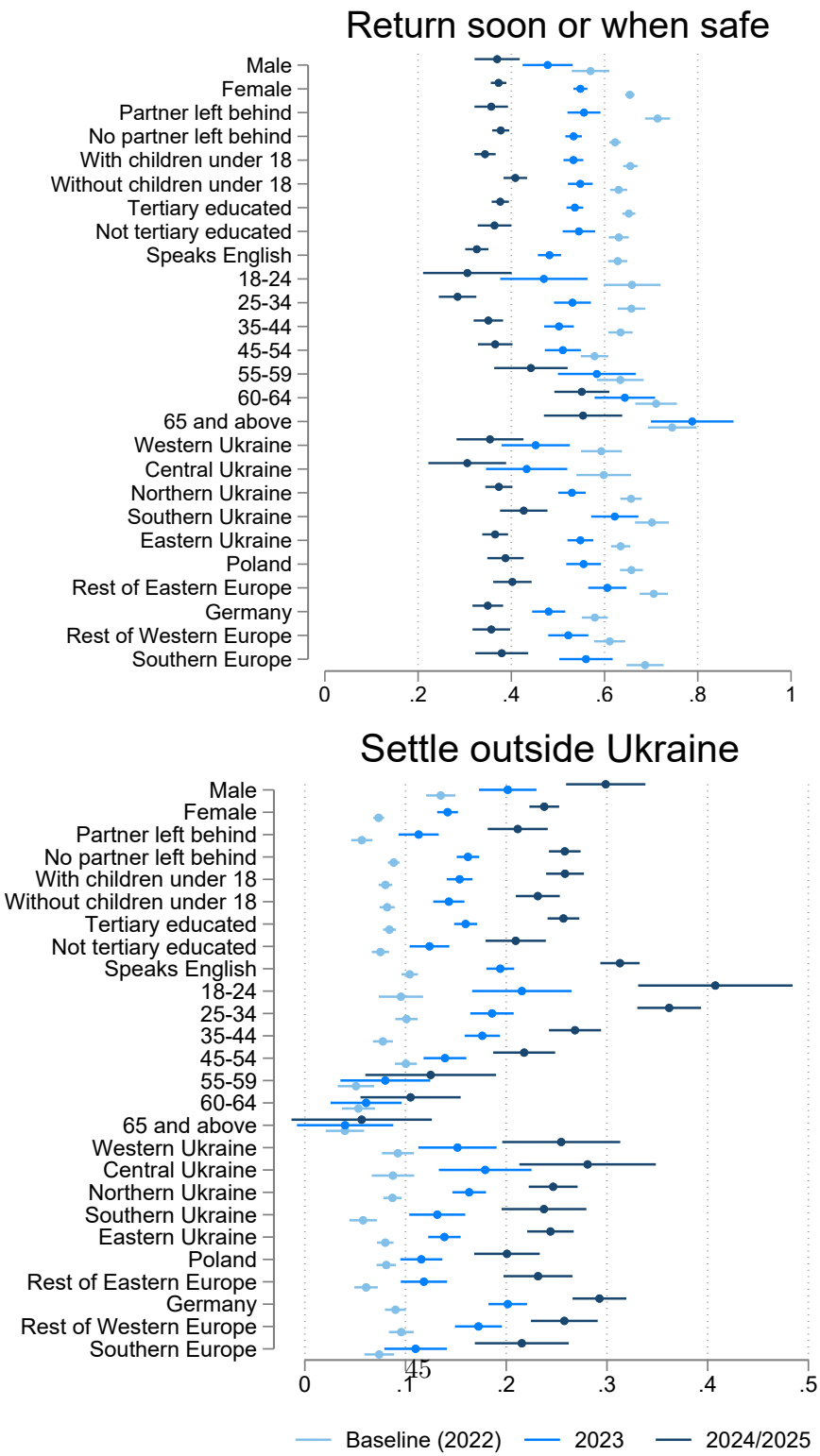
Notes: This figure shows changes in territorial control between the first baseline survey (June 14, 2022) and the last wave 10 interview (May 28, 2025) across home districts in Ukraine. Occupied districts are either partially or fully occupied.

Figure A8. : Predictors of return to Ukraine



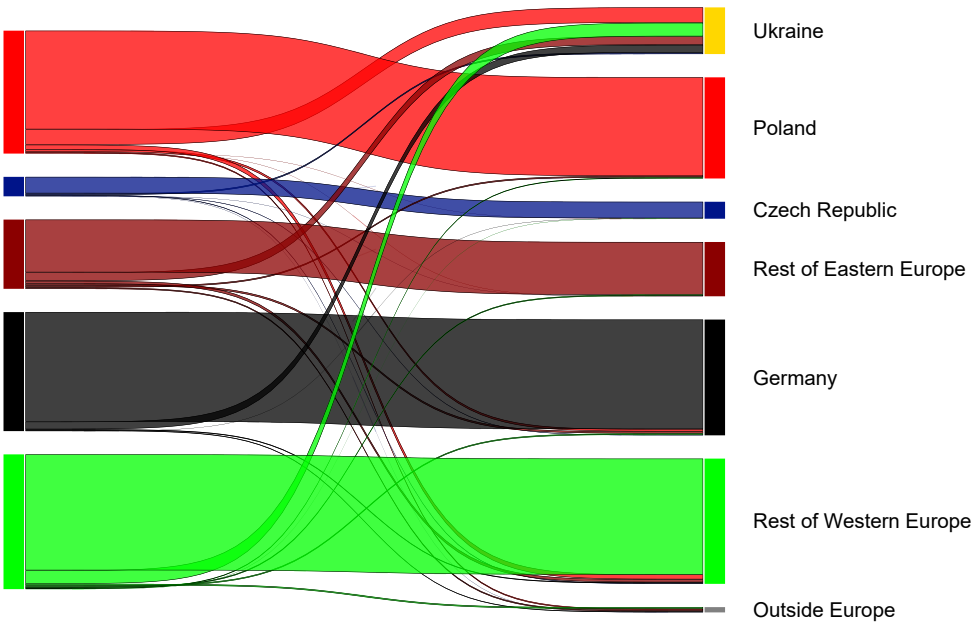
Notes: This figure shows coefficient plots of three multivariate OLS regressions with 95% confidence intervals (based on standard errors clustered at the district level). The outcome variables is a binary indicator for whether a respondent returned to Ukraine. For each outcome, it shows the model on responses in the baseline wave in 2022 (N = 9,527), waves 3–6 in 2023 (N = 3,788), and waves 7–10 in 2024 and 2025 (N = 4,721). We include the same control variables as in Table 2, except for the distance between the initial destination country and the home municipality.

Figure A9. : Predictors of return intentions



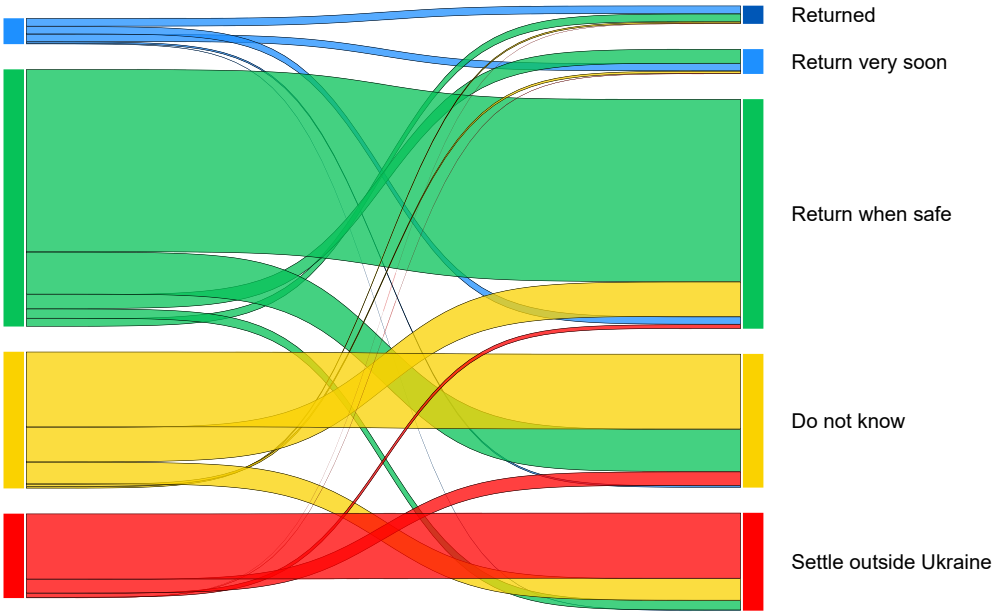
Notes: This figure shows coefficient plots of three sets of three multivariate OLS regressions with 95% confidence intervals (based on standard errors clustered at the district level). The outcome variables are: (a) plans to return soon or when safe and (b) plans to settle outside Ukraine. The omitted category are respondents who returned or who answer "do not know" and "prefer not to answer". For each outcome, it shows the model on responses in the baseline wave in 2022 (N = 9,527), waves 3–6 in 2023 (N = 3,788), and waves 7–10 in 2024 and 2025 (N = 4,721). We include the same control variables as in Table 2, except for the distance between the initial destination country and the home municipality.

Figure A10. : Sankey diagram of changes in residence over time (long differences)



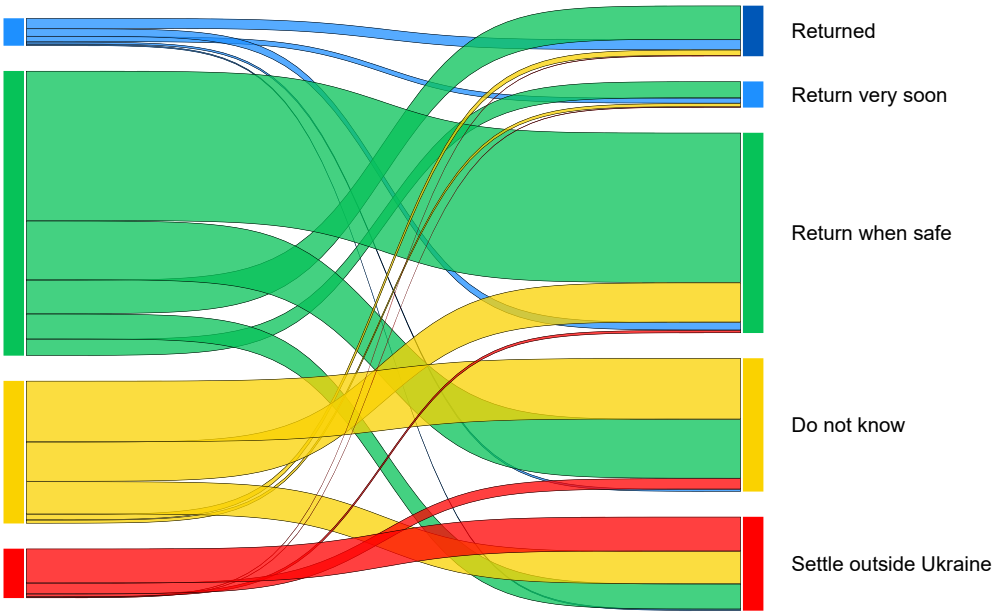
Notes: Sankey diagram of the current location on the long differences sample, including respondents whose home municipality is unknown. N = 2,991.

Figure A11. : Sankey diagram of changes in return (intentions) over time (short differences)



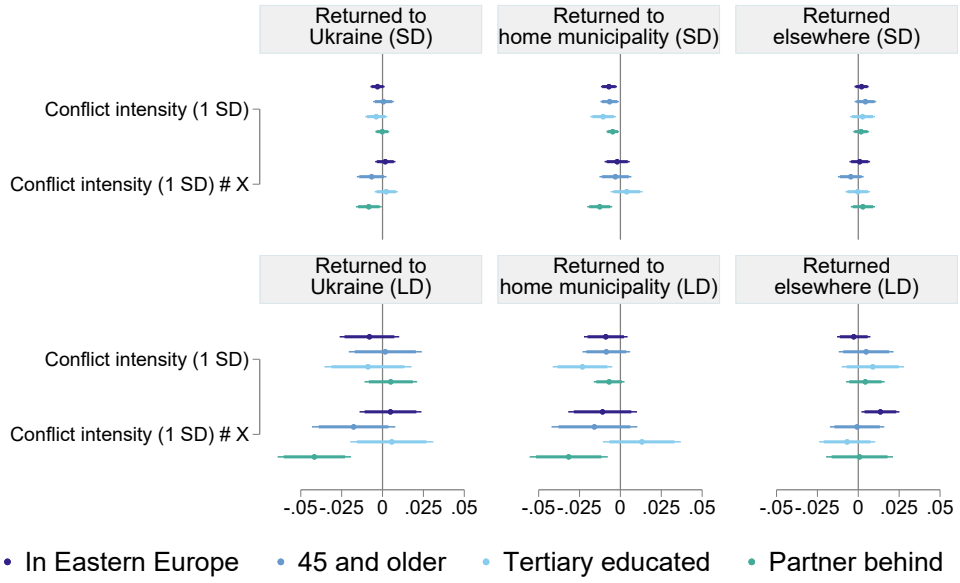
Notes: Sankey diagram of return (intentions) on the full short differences sample, including respondents whose home municipality is unknown. N = 9,741.

Figure A12. : Sankey diagram of changes in return (intentions) over time (long differences)



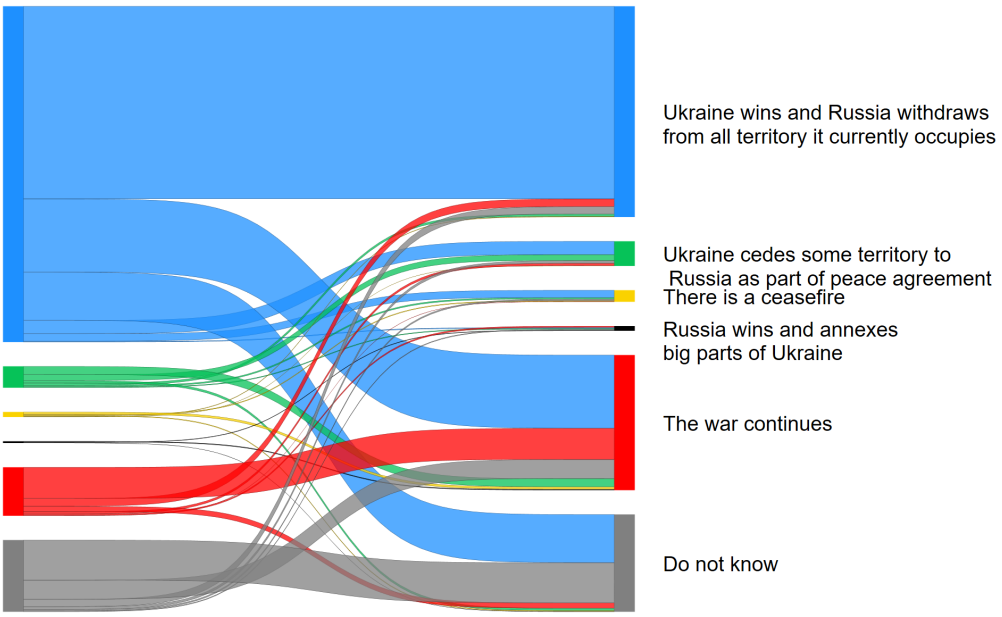
Notes: Sankey diagram of return (intentions) on the full long differences sample, including respondents whose home municipality is unknown. N = 2,991.

Figure A13. : Heterogeneity in the effects of conflict



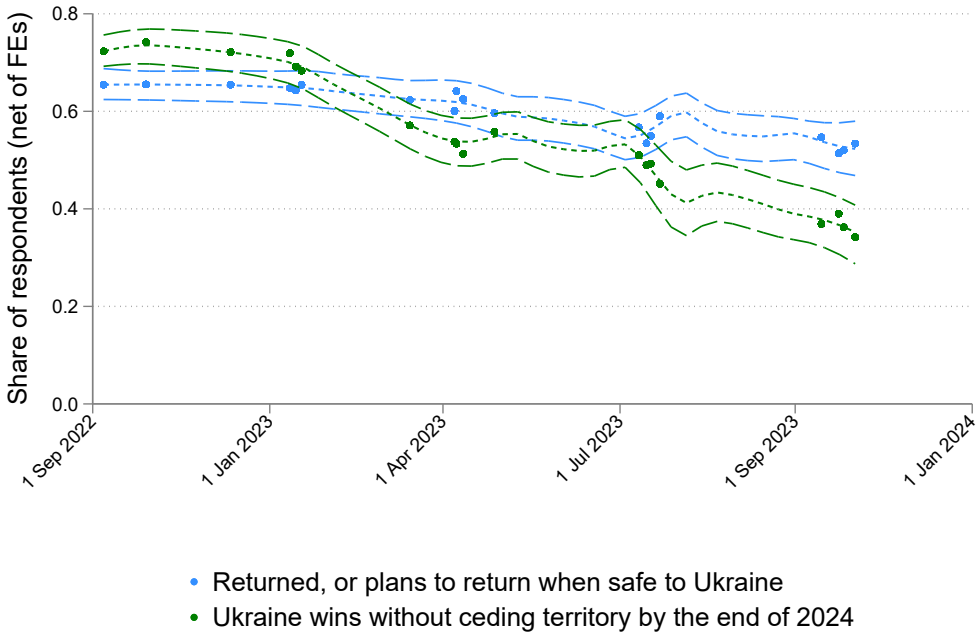
Notes: This figure shows the effect of conflict intensity in the short (top) and long (bottom) difference samples across four dimensions of heterogeneity: residing in an Eastern European country at baseline, being age 45 or older, having a tertiary degree, and having a partner remaining in Ukraine at baseline. For each dimension, we define a binary indicator and interact it with the standardized conflict-intensity measure in the specification. For details on the specification, controls, and data, see the notes to Table 2. The figure shows 90% and 95% confidence intervals based on standard errors clustered at the district level.

Figure A14. : Sankey diagram of changes in expectations about the outcome of the war until the end of 2024



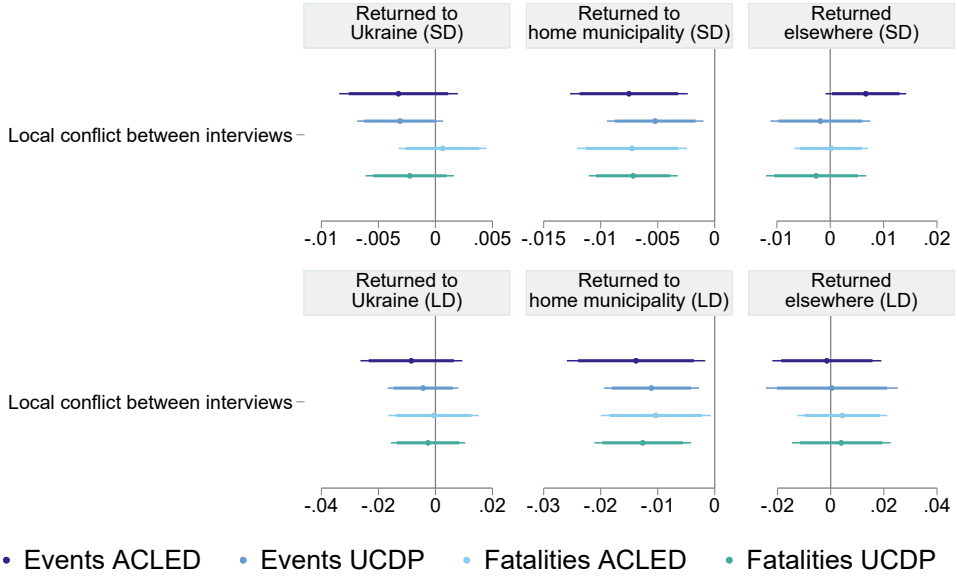
Notes: This figure shows individual-level changes in expectations about the outcome of the war by the end of 2024. The sample consists of first differences between the first interview in the second and third wave (September 2022 – January 2023) and the interview in the sixth wave (October – November 2023). The average number of days between the interviews is 243 days. N = 1,624.

Figure A15. : Share of respondents expecting Ukraine to win by the end of 2024 and planning to return over time



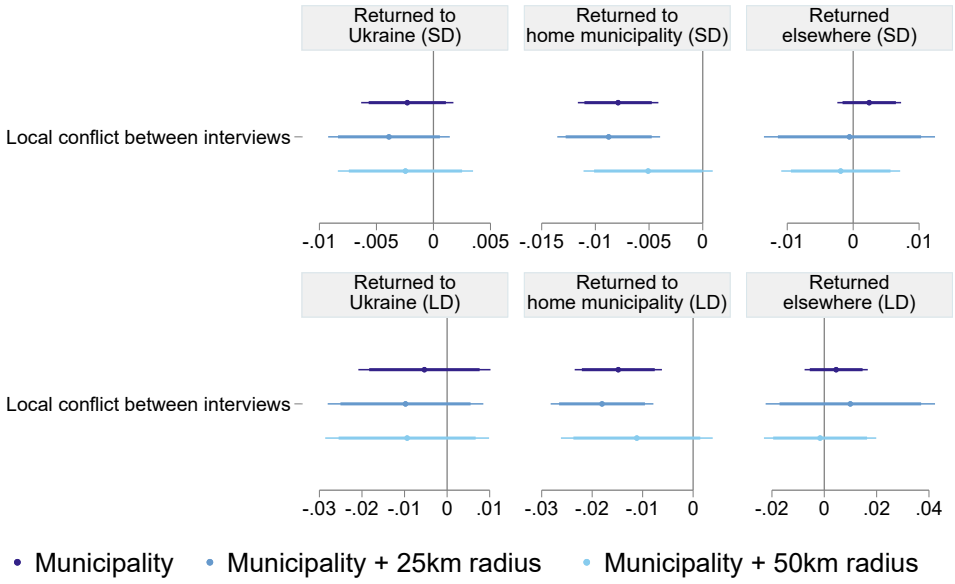
Notes: Binned scatterplot with non-parametric trend of the share of respondents expecting Ukraine to win the war by the end of 2024 over calendar time and the total share of respondents who returned, plan to return soon, or when safe, net of individual fixed effects, with 90% confidence bands (based on a bootstrap procedure at the respondent level). The binned scatterplot is based on 20 bins. For an explanation of the construction of this Figure, see notes to Figure 1. Based on waves 2 – 6. N = 5,357.

Figure A16. : Robustness test: independent conflict measures, logarithmic



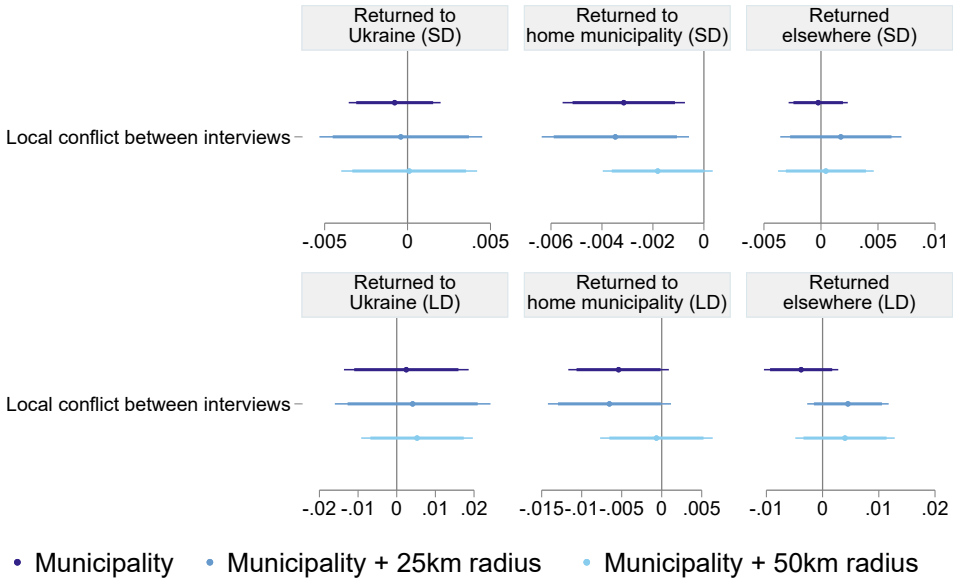
Notes: This figure shows the effect of conflict intensity on the short (top) and long (bottom) difference samples for different measures of conflict. We replace the PCA-based measure of conflict intensity by its four individual constituents, one at a time. These are: the log (plus one) number of events in ACLED, events in UCDP, fatalities in ACLED, and fatalities in UCDP per 30 days between interviews. For details on the specification, controls, and data, see notes to Table 2. The figure shows 90 and 95% confidence intervals constructed from standard errors clustered at the district level.

Figure A17. : Robustness test: radius of conflict



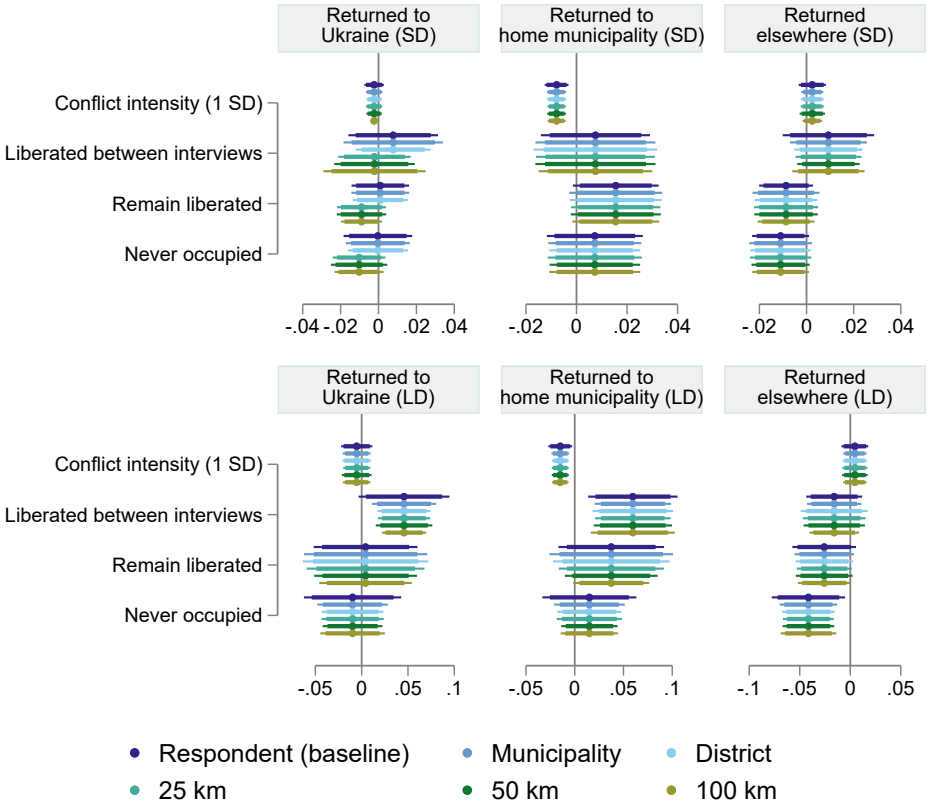
Notes: This figure shows the effect of conflict intensity on the short (top) and long (bottom) difference samples for different measures of conflict. We replace the measure of conflict intensity with an analogous measure, also including conflict in a radius around one's home municipality. We show results for conflict within municipality and within the municipality and 25 and 50 kilometer radii around the municipality. Every estimate is obtained from a separate regression. For details on the specification, controls, and data, see notes to Table 2. The figure shows 90 and 95% confidence intervals constructed from standard errors clustered at the district level.

Figure A18. : Robustness test: radius of conflict (linear)



Notes: This figure shows the effect of conflict intensity on the short (top) and long (bottom) difference samples for different measures of conflict. We replace the measure of conflict intensity with an analogous measure also including conflict in a radius around one's home municipality. We show results for conflict within municipality and within the municipality and 25 and 50 kilometer radii around the municipality. When constructing these measures of conflict, we omit the step where we take the log(x+1) transformation. Every estimate is obtained from a separate regression. For details on the specification, controls and data, see notes to Table 2. The figure shows 90 and 95% confidence intervals constructed from standard errors clustered at the district level.

Figure A19. : Robustness test: spatially clustered standard errors



Notes: This figure shows the effect of conflict intensity on the short (top) and long (bottom) difference samples for different restrictions on the variance-covariance matrix. The Figure shows 90 and 95% confidence intervals constructed from standard errors allowing for arbitrary correlation at the individual (as in Table 2), municipality and district level, and 25, 50 and 100 kilometers around the home municipality (Colella et al., 2023). Allowing for clustering at 100 km or more renders standard errors unreasonably small in some instances, suggesting a low number of effective clusters. For details on the controls and fixed effects, see notes to Table 2.